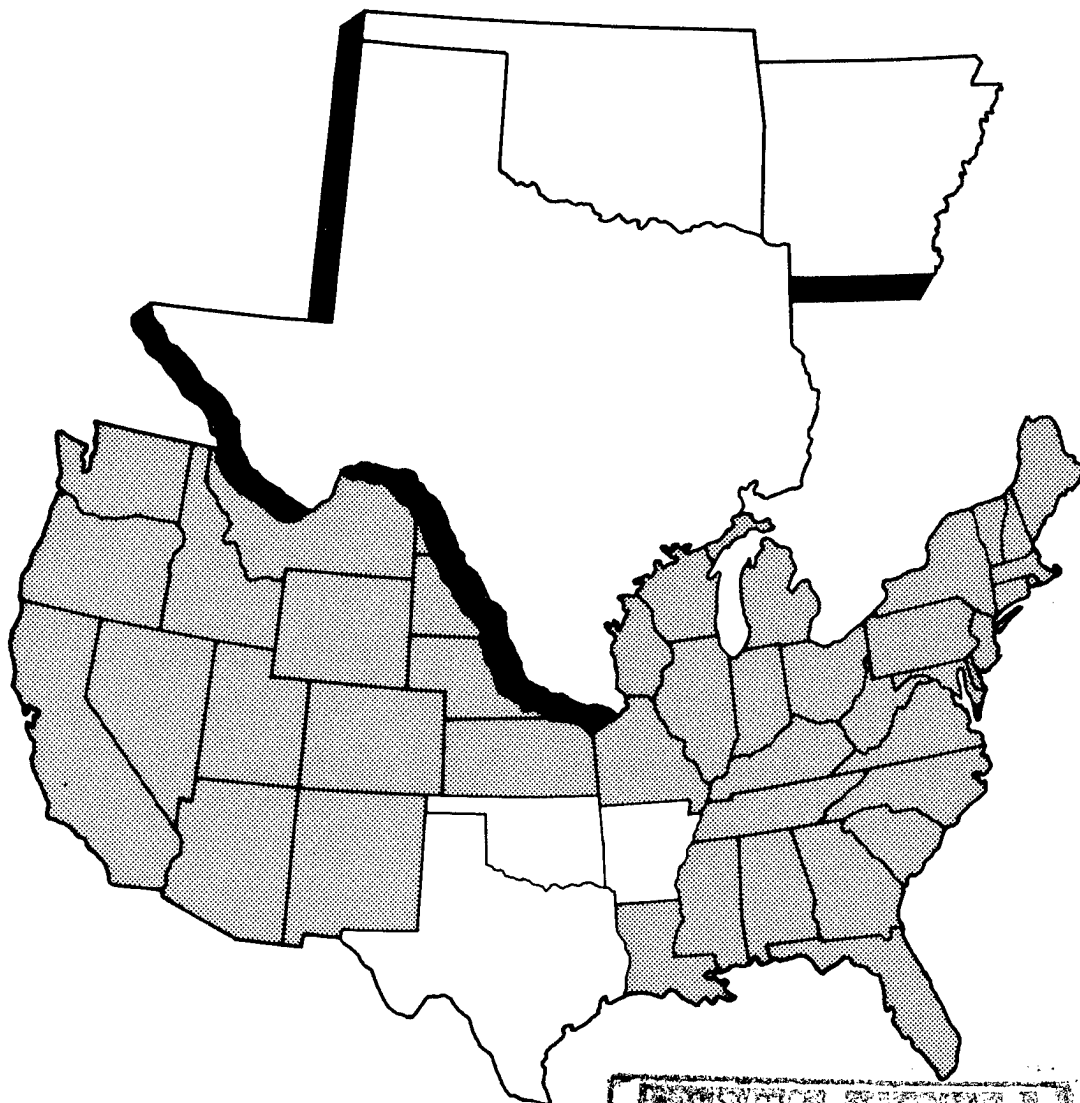


FWS/OBS-83/22
SEPTEMBER 1983

OPPORTUNITIES TO PROTECT INSTREAM FLOWS IN TEXAS, OKLAHOMA, AND ARKANSAS



ENVIRONMENTAL STATEMENT E
Approved for public release
Distribution Unlimited

Fish and Wildlife Service

U.S. Department of the Interior

DTIC QUALITY INSPECTED 1

19970320 091

FWS/OBS-83/22
September 1983

OPPORTUNITIES TO PROTECT INSTREAM FLOWS IN
TEXAS, OKLAHOMA, AND ARKANSAS

by

Mary Ray White
303 First of Bear Valley Building
5353 West Dartmouth Avenue
Denver, CO 80227

Contract No. 14-16-009-79-100
Water Resources Analysis Project

Project Officer

Berton L. Lamb
Cooperative Instream Flow Service Group
Western Energy and Land Use Team
U.S. Fish and Wildlife Service
Drake Creekside Building One
2627 Redwing Road
Fort Collins, CO 80526

Performed for
Western Energy and Land Use Team
Division of Biological Services
Research and Development
Fish and Wildlife Service
U.S. Department of the Interior
Washington, DC 20240

This report should be cited as:

White, M. R. 1983. Opportunities to protect instream flows in Texas, Oklahoma,
and Arkansas. U.S. Dept. Int., Fish Wildl. Serv. FWS/OBS-83/22. 94 pp.

FOREWORD

In Opportunities to Protect Instream Flows in Texas, Oklahoma, and Arkansas, Dr. White provides the reader with a basic survey of State prerogatives and programs that may be used to protect the instream uses of water. Because of the interest and responsibilities of State fish and game agencies and other conservation organizations, most of these opportunities are related to fish and wildlife habitat. However, there are many other instream uses considered, including hydroelectric power production, recreation, navigation, downstream delivery, and waste load assimilation. The purpose of this document is to illustrate methods to manage these instream uses within the context of existing rules and regulations.

Even though Dr. White paid close attention to statutes, this document is not intended as a legal reference. It is designed to be a planning tool to survey current State programs, compare approaches to instream use protection, and index a preliminary evaluation of the costs and benefits of a wide range of programs. Dr. White has provided a summary table for each State, which serves as an index to available opportunities. We anticipate that these tables will be the reader's most valuable guide to this report.

The Western Energy and Land Use Team, Division of Biological Services, U.S. Fish and Wildlife Service, has published a number of similar documents in the past. Information is now available for 26 Western, Midwestern, and Southern States (Table 1). The complete list of reports in this series is displayed in Table 1. The combination of State reports in this document presents an opportunity for easy comparison of specific programs. This is particularly useful because of the wide variety of instream flow protection programs or possibilities.

The primary purpose of this series of documents is to point out the opportunities in instream flow management which currently exist so that planners and managers can anticipate development, plan appropriate programs, and evaluate the costs and benefits of certain courses of action. In addition, the reports are brief histories of the level of success of various State programs. The use of this information can be a significant cost saving to planners and managers.

In summary, each document has an Executive Summary which discusses its purpose, uses, and limitations. Each document also has separate information tables (Tables 2, 3, and 4) which summarize the contents for each State. It

is hoped that the research represented in these documents will provide the kind of overview and preliminary evaluation that will ease the burden of State, local, or Federal planners and managers as they seek to meet their increasingly complex responsibilities.

Table 1. Publications in the opportunity series.

Title	Publication Number
Instream Flow Strategies for Arizona	FWS/OBS-78/35
Instream Flow Strategies for California	FWS/OBS-78/36
Instream Flow Strategies for Colorado	FWS/OBS-78/37
Instream Flow Strategies for Idaho	FWS/OBS-78/38
Instream Flow Strategies for Montana	FWS/OBS-78/39
Instream Flow Strategies for Nevada	FWS/OBS-78/40
Instream Flow Strategies for New Mexico	FWS/OBS-78/41
Instream Flow Strategies for North Dakota	FWS/OBS-78/42
Instream Flow Strategies for Oregon	FWS/OBS-78/43
Instream Flow Strategies for South Dakota	FWS/OBS-78/44
Instream Flow Strategies for Utah	FWS/OBS-78/45
Instream Flow Strategies for Washington	FWS/OBS-78/46
Instream Flow Strategies for Wyoming	FWS/OBS-78/47
Opportunities to Protect Instream Flows in Alaska	FWS/OBS-82/33
Opportunities to Protect Instream Flows in Nebraska and Kansas	FWS/OBS-83/02
Opportunities to Protect Instream Flows in Minnesota and Iowa	FWS/OBS-83/07
Opportunities to Protect Instream Flows in Georgia	FWS/OBS-83/20
Opportunities to Protect Instream Flows in Michigan and Wisconsin	FWS/OBS-83/21
Opportunities to Protect Instream Flows in Texas, Oklahoma, and Arkansas	FWS/OBS-83/22
Opportunities to Protect Instream Flows in Missouri	IFG Working Paper 308.16
Hawaiian Water Rights and Instream Flows	IFG Working Paper 308.3

EXECUTIVE SUMMARY

OBJECTIVES

This document combines the efforts of several individuals, agencies, and organizations toward a common objective: the identification; description; and preliminary evaluation of promising opportunities for protecting instream uses of water under existing law in Texas, Oklahoma, and Arkansas.

This report is intended for the use of planning and management personnel who need an overview of potential opportunities for preserving instream flows. It is not intended to replace or challenge the advice of agency counsel and it is not written to provide legal advice. Instead, it is designed as a guide for the person trying to find his way among sometimes bewildering Federal and State statutes and administrative practices. This report is not, and should not be taken as, official policy or prediction of future actions by any agency. It is simply a summary of some potential opportunities for protecting instream flows.

Toward these objectives, the U.S. Fish and Wildlife Service, through its Water Resources Analysis Project, contracted with Dr. Mary Ray White to identify and describe these opportunities under State laws and current State administrative practice. The project had two phases. In Phase I, Dr. White identified potential opportunities in each State being considered. These descriptions were reviewed for accuracy and utility by a wide range of State and Federal personnel. In Phase II, Dr. White prepared a report for each State. Each document has undergone extensive review by State and Federal personnel.

BACKGROUND CONSIDERATIONS

Both State and Federal agencies have important roles to play in water management, particularly in instream flow preservation. The summaries offered here are not intended to suggest that Federal instream flow decisions will or should replace current State water management systems. It is very important for Federal employees to recognize the importance of State water management policy and statutes. In addition, U.S. Department of the Interior employees should recognize that they are required to follow the water policies of the Secretary of the Interior.

Federal employees should recognize that a close working relationship with State agencies is often the most practical way of getting things done. Resources are always limited and, in some cases, gathering and developing information, as required by these opportunities, may be beyond the financial power of the agency most concerned. As a result, agencies and individuals should learn to cooperate with similarly oriented private, State, and Federal organizations to ensure success.

Many of the opportunities described in this booklet are frequently used and will be familiar to the reader. Some of them include activities that are required of U.S. Fish and Wildlife Service field personnel. Examples of these activities may be given, while no examples are necessary for others.

Federal employees should be particularly cautious when using unusual or untried approaches and should refer legal questions to the office of their Regional Solicitor or general counsel. Close cooperation with the Solicitor or agency counsel will result in fewer lawsuits and more successful results overall.

The reader who wishes to protect or augment an instream flow should begin by looking at the physical and legal circumstances of the whole stream. A planner or manager should consider all types of land and water interests involved. The stream should be examined both up and downstream of the reach of interest. Downstream interests should be considered because often they have statutory or contractual power to hold water instream. This survey should include ownership, possession, and control of lands and waters, and the types of use to which the lands and waters are presently being put, such as agriculture, planned development, wilderness, or industry. It is important to remember that contracts or leases may be held by other organizations and individuals. In addition, government agencies may have authority over the land and water. Potential governing agencies are many and diverse, ranging from the Federal government to special districts and municipal bodies.

Often there is more than one way to solve an instream flow problem. When given a choice, the planner or manager should seek the least expensive, least disruptive, and simplest solution to the problem. In some cases, this may mean having a conversation with a landowner or local administrator, sending a letter to the owner or lessee of land and water, or simply arranging a meeting between two water users who could stagger their withdrawals or in some other way provide for stream resources. A guide to these opportunities is found in Tables 2, 3, and 4.

Offering information on instream flow needs to other agencies of the State or Federal government is complex and often provided for by specific statutes. A risky, complex, and expensive approach to protecting streams is the use of lawsuits. In some cases, litigation may be a necessary part of protecting a right and cannot be avoided. When possible, the manager should stay out of the courts. Lawsuits are expensive, and their outcome is often unpredictable.

In using this report, the reader should be aware of its purpose and limitations. First, only a few of many possible opportunities are described herein. The user should exercise initiative, judgment, and creativity in dealing with any specific situation. Second, this report should be used only as a starting point. In any situation related to the acquisition of water rights, legal advice should be sought. This report should in no way be construed as a substitute for the opinion of a private attorney, attorney general, or agency counsel. Third, this report is neither a policy nor a decision document; it is simply a collection of opportunities which appear to have utility in a variety of situations.

The purpose of this booklet is to encourage cooperative and innovative thinking by all persons interested in instream flows for fish and wildlife, recreation, and watershed management at Federal, State, or local levels of government, as well as private individuals and wildlife organizations. A summary table of opportunities is provided for each State (Tables 2, 3, and 4). Many talented people want to protect instream flows; their cooperation in a variety of approaches will be necessary to solve the problem.

Table 2. Opportunities for protecting instream flows in Texas.

Title	Identification		Application		
	General description	Applicable situations	Initiation		Implementation
			Parties	Actions	
Riparian Rights (see page 6)	Riparian owners may protect certain beneficial water uses and protect flows.	Riparian uses affected by other users.	Riparian owners.	Negotiate with conflicting users, sue.	Seek court decisions. Negotiation and litigation costs.
			Dept. of Water Resources.		Administrative costs.
					Adjudicate riparian rights. V.T.C.A. Water Code 11.304 - 11.341.
Appropriative Rights (see page 8)	Appropriations can be denied or conditioned to protect streams. V.T.C.A. Water Code 11.146, 11.024.	Application for appropriation.	Affected water users, riparian owners, public interest groups.	Protest application.	Condition or deny applications to protect flows. Hearing costs, negotiation costs.
	Appropriations can be sought to protect up-stream flows.	Downstream uses.	Potential users.	Apply for water right.	Grant downstream rights.

Table 2. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Expenditures
Other Approaches Using Water Rights (see page 13)	Geothermal resources, transportation, and eminent domain provisions of the Water Code help promote instream values. V.T.C.A. Natural Resources Code 141.001 et seq.; V.T.C.A. Water Code 11.042, 11.033.	Project conditions, project operation schedules.	Riparian owners, affected water users, municipalities.	Negotiate with applicants.	Railroad Commission, Dept. of Water Resources, municipalities.	Study costs, negotiation costs, possible court costs.
Adjudication (see page 15)	General adjudication can protect flows by clarifying water use. V.T.C.A. Water Code 11.301 et seq.	Unadjudicated areas of the State.	Ten or more claimants or Dept. of Water Resources.	Petition for adjudication.	Dept. of Water Resources.	Administrative and hearing costs.
Groundwater (see page 17)	Unregulated groundwater may be used to augment stream flows. V.T.C.A. Water Code 11.201 et seq.; 52.116 - 118.	Wells producing less than 100,000 gallons per day near stream in groundwater districts.	Cities, large diverters, landowners.	Locate groundwater sources near streams.	Cities, large appropriators.	Drilling and pumping costs.

Table 2. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Waste Treatment (see page 22)	Upstream flows may be purchased and protected to permit cities and industries to meet waste treatment requirements. V.T.C.A. Water Code 26.023.	Municipal waste treatment and discharge into streams.	Cities, industries.	Apply for funds and permission to appropriate or change use of upstream waters.	Texas Water Quality Board within Dept. of Water Resources.	Release funds for costs of purchase of upstream rights to enable cities to meet treatment requirements.
Sanctuaries (see page 25)	Include stream flow needs in developing and maintaining State wildlife sanctuaries. V.T.C.A. Parks & Wildlife, 68.001 et seq., 81.201 et seq.	Existing or potential sanctuaries on streams or watersheds; areas sheltering endangered species.	Parks and Wildlife Department.	Study stream needs, identify appropriate sites and water rights.	Parks and Wildlife Department, county commissioners, courts.	Acquire land and water rights to protect endangered species, establish sanctuaries and set aside water.
Compacts (see page 26)	Compacts apportion water use between States. V.T.C.A. Water Code 41.001	Interstate water.	Dept. of Water Resources, public interest groups, local citizens.	Petition State to enforce compacts.	Attorney General.	Ensure compact requirements are met through negotiation or litigation.

Table 2. (Concluded)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Exchange of Use (see page 28)	Application of waste to land reduces demand on streams. Water Code 11.025, 11.026, 11.121.	Water use near cities.	City governments, farmers.	Study, negotiate costs, set up system.	City governments, Department of Water Resources.	Permit applications of effluent to nearby lands, permit may be required (see appropriate rights).
The Public Trust Doctrine (see page 82)	State administration of natural resources must consider public rights. Texas Constitution, Art. 16, Sec. 59, court cases. V.T.C.A. Water Code 21.003.	Navigable streams, State owned property. State administration of water rights.	Public interest groups, citizens.	Petition State agencies to enforce public trust rights.	Individuals, affected State agencies, Attorney General.	Initiate litigation to protect public rights. Legal costs.

Table 3. Opportunities for protecting instream flows in Oklahoma.

Title	Identification			Application		
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Expenditures
Appropriative Rights (see page 35)	Acquire downstream rights to protect upstream flows. Okla. Stat. Ann. 105.12, et seq.	Streams not yet fully appropriated, secondarily or over-appropriated streams.	Individuals, public interest groups, local and State agencies.	Locate good rights on streams to be protected, apply for water rights.	Water Resources Board.	Purchase or lease costs, application and hearing costs.
Conditions on Water Permits (see page 37)	Water Resources Board limit and condition permits to protect flows. Okla. Stat. Ann. 105.12.	When a new appropriation impinges on existing rights to streamflow.	Water Resources Board, appropriators, agencies affected by water use, irrigation districts.	Protect applications, suggest modifications and conditions.	Water Resources Board.	Study, hearing and negotiation costs.
Riparian Rights (see page 40)	Riparian owners may protect certain beneficial uses to aid flow.	Riparian uses affected by appropriations.	Riparian owners, State agencies that own riparian lands.	Object to Water Resources Board, negotiate, sue.	Water Resources Board.	Administrative, negotiation and legal costs.
Other Water Board Approaches (see page 40)	Condemnation conveyance and adjudication.	Project operation, transportation and water delivery, plus water rights uncertainty.	Water users, municipalities.	Petition Okla. Water Resources Board.	Okla. Water Resources Board, municipalities.	Study costs, court costs.

Table 3. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Expenditures
Groundwater	(see page 42)	Wells used to augment streams, wells drying up streams. 82 Okla. Stat. Ann. 1020.1, et seq.	Well owners, appropriators affected, governmental agencies using water.	Study stream needs. Negotiate with owners.	Governmental appropriators, Water Resources Board.	Study costs, hearing costs, administrative costs.
Districts	(see page 45)	District plans and supervision of use to protect instream flows. 82 Okla. Stat. Ann. 1501-101, et seq.	Local citizens, appropriators.	Petition districts to consider flows in planning and administration.	Conservation and conservancy districts.	Petition costs, administrative costs.
Cities	(see page 48)	City powers of condemnation, water districts, master plan used to protect flows. 11 Okla. Stat. Ann. 47-101, et seq.	Citizens, local governmental agencies.	Study needs, petition municipal agencies.	City, water districts.	Administrative costs, condemnation costs, legal costs.
			Streams in or near cities.		Establish district, enforce rules, exercise eminent domain, protect water rights.	

Table 3. (Concluded)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Expenditures
Compacts (see page 50)	Compacts apportion water use between States. 82 Okla. Stat. Ann. 526.1, 1421, 1431.	Interstate waters.	Public interest groups, agencies affected by use of these waters.	Study needs, determine whether compact violated, petition State.	Attorney General.	Negotiate, sue violators of compact. Negotiation costs, litigation costs.
State Controls (see page 51)	Protection of flows through other agencies. 82 Okla. Stat. Ann. 931, 1451. 29 Okla. Stat. Ann. 3-101.	Pollution control programs, land leases, scenic rivers.	Public interest groups, citizens.	Petition State agencies, monitor needs, locate scenic streams.	Dept. of Pollution Control, Dept. of Wildlife Conservation, Scenic Rivers Commission.	Control pollution to benefit flows, condition leases to protect flows, study rivers for designation. Study and administrative costs.
Oklahoma Comprehensive Water Plan (see page 53)	Plan includes proposals that will affect streams.	Streams that have existing or proposed reservoir.	Public interest groups.	Study plan, petition for protection of flows.	Water Resources Board.	Include flows in revisions of plan to protect flows in implementing legislation. Study and petition costs.
The Public Trust Doctrine (see page 82)	State control of resources must consider public rights.	State-owned property, State-controlled water rights.	Public interest groups, citizens, governmental agencies charged with protecting public interests.	Study public needs.	Public interest groups, citizens, governmental agencies charged with protecting public interests.	Petition or sue State agencies to enforce public rights. Study costs, legal costs.

Table 4. Opportunities for protecting instream flows in Arkansas.

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Construction Permits (see page 59)	Soil & Water Conservation Commission can condition or deny dam permits. Ark. Stat. Ann. 21-1301, <u>et seq.</u>	Applications made for dam construction permits.	Affected water users.	Petition for denial of application or conditions on it.	Soil & Water Conservation Commission.	Deny or condition permits. Planning, study, administrative costs.
Court Decrees (see page 60)	Construction of private dams conditioned by courts. Ark. Stat. Ann. 35-501, 35-526.	Whenever a private dam impacts another's land, the Court may require fish passage.	Affected landowner, Soil & Water Conservation Commission.	Court suit.	County court.	Court may impose condition on construction. Court costs.
Conditions on Diversions (see page 61)	Diversions works must be operated consistent with directions from Soil & Water Conservation Commission. Ark. Stat. Ann. 21-1316.	In time of drought the Soil & Water Conservation Commission may restrict diversion to important uses.	Private parties, other affected agencies.	Petition Commission to take action.	Soil & Water Conservation Commission.	Issue conditions on diversions of water. Not likely to be a fruitful opportunity, study costs.

Table 4. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Expenditures
State Water Plan (see page 61)	Revision of the State water plan can include stream-flow needs. Ark. Stat. Ann. 21-1318.	Water development by political subdivisions of Arkansas.	Public interest groups, affected State agencies. Water Policy Task Force of Soil & Water Conservation Commission.	Study and include stream needs in the plan.	Implementation of any proposed plan would be in the discretion of the executive and legislative branches.	Review of proposed plan and implementation costs.
Soil Conservation (see page 63)	Condition or halt development that is destructive of water resources. Ark. Stat. Ann. 9-901, et seq. Develop land use regulations in districts. Ark. Stat. Ann. 9-901.	Land development. All counties.	Soil & Water Conservation Commission. Soil Conservation District Boards of Supervisors.	Support new regulations.	Soil & Water Conservation Commission. Soil Conservation District Boards of Supervisors.	Drafting costs, implementation costs.
Interstate Compacts (see page 63)	Compacts are authority for protecting water resources. Ark. Stat. Ann. 9-1601, 21-2101, 82-1974.	Interstate waters.	Soil & Water Conservation Commission.	Formulate proposals for interstate compacts.	State Attorney General. Enforce the compacts through negotiation and legislation.	Planning, negotiation, enforcement and litigation costs.

Table 4. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Eminent Domain (see page 65)	Ark. Game & Fish Commission may acquire property. Ark. Const. Amend. No. 35, Sec. 8.	The Commission may acquire a property interest in water through court domain to protect instream uses.	Private parties, Game & Fish Commission staff.	Petition Commission to take action.	Game & Fish Commission.	Purchase property interest in water. Cost of studies, cost of property, court costs.
Real Estate (see page 66)	Game & Fish Commission may purchase land for refuges. Ark. Stat. Ann. 47-101 - 136.	Whenever land ownership would benefit instream uses.	Game & Fish Commission staff, other agencies.	Petition Commission to take action.	Game & Fish Commission.	Purchase real estate for the purposes of a refuge. Cost of property.
Direct Action (see page 66)	Game & Fish Commission may intervene in situations which threaten fish. Ark. Stat. Ann. 47-512.	Whenever a person, firm, etc. proposes to lower the stage of a stream in a way which would threaten fish.	Game & Fish Commission staff, private parties.	Notify Commission, issue citation.	Game & Fish Commission.	Impose fine, negotiate. Cost of enforcement, possible court costs.

Table 4. (Continued)

Title	Identification		Application		
	General description	Applicable situations	Initiation		Implementation
			Parties	Actions	
State-Federal Cooperation (see page 67)	Inter-agency negotiation between Game & Fish Commission and Federal construction agencies.	The Game & Fish Commission makes recommendations on Federal Digest operation.	Game & Fish Commission staff, U.S. Fish & Wildlife Service.	Suggest opportunities for consultation.	Consultation. Cost of studies.
Department of Parks and Tourism (see page 69)	Acquire parks and trails to protect stream flows. Ark. Stat. Ann. 9-601, et seq.	Places where park needs stream flows complement each other.	Arkansas Trails Council.	Suggest trail development.	Plan, purchase, negotiate, condemn land. Condemnation, review, and planning costs.
Department of Pollution Control and Ecology (see page 70)	Control pollution to benefit streams. Ark. Stat. Ann. 5-908, 82-1901, et seq.	Plans prepared by other State agencies, application made for discharge permits.	Dept. of Pollution Control and Ecology.	Revise plans and recommend increased stream protection.	Condition discharge permits. Review and negotiation costs.

Table 4. (Continued)

Title	Identification			Application		
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Expenditures
Arkansas Natural and Cultural Heritage Commission (see page 71)	EIS to be filed before timber cutting permitted. Ark. Stat. Ann. 47-135.	Timber cutting on Game & Fish Commission lands.	Game & Fish Commission.	Refer timber applicant to Natural & Cultural Heritage Commission.	Natural and Cultural Heritage Commission.	EIS review costs, hearing costs.
	State system of natural areas of land and waters to be selected and administered. Ark. Stat. Ann. 9-1401, et seq.	Natural areas of primeval character or other interests.	State agencies.	Study inclusion of natural lands in wilderness areas, wildlife refuges, or wild and scenic rivers.	Natural and Cultural Heritage Commission.	Purchase costs, negotiation costs.
Planning Agencies (see page 72)	Include stream needs in early development of land use plans. Ark. Stat. Ann. 9-301, 9-319, 9-324.	Revision of official State plan. Development of State recreation plan, help to municipalities.	Office of Planning, Dept. of Local Services, Planning and Development Districts.	Include flow needs in preparing official State plan. Protect stream flows when updating State recreation plan and assisting municipal planners.	Office of Planning, Dept. of Local Services, Planning and Development Districts, Office of Planning in Governor's Office.	Study costs.

Table 4. (Continued)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Actions
Natural and Scenic Rivers (see page 73)	Rivers can be included in Arkansas System of Natural and Scenic Rivers for natural, scenic, fish and wildlife, and other qualities. Ark. Stat. Ann. 9-1201, et seq.	Rivers largely free of impoundments, with special values.	Natural and Cultural Heritage Commission.	Evaluate and recommend rivers for inclusion.	General Assembly.	Designate rivers. Petition costs, evaluation and enforcement costs.
Cities and Counties (see page 75)	Exercise eminent domain for flood control. Ark. Stat. Ann. 17-315.	Areas and streams subject to flooding and likely to be developed.	Affected agencies and groups.	Plan or recommend stream and floodway protection.	County Quorum Court.	Condemnation costs, planning costs.
	Community projects can include stream use. Ark. Stat. Ann. 17-1420.	Unincorporated rural communities, small towns.	Affected agencies and groups.	Study needs, petition Quorum Court.	County Quorum Court.	Study costs.
	County planning boards can protect flows by directing development. Ark. Stat. Ann. 17-1107, et seq.	Counties without plans, or with special land development/stream flow needs.	Affected agencies and groups.	Study needs, petition Quorum Court.	County planning board or Quorum Court.	Prepare county plan, recommend protection of areas of environmental concern. Study and planning costs.

xxiii

Title	Identification		Application				
	General description	Applicable situations	Initiation		Implementation		
			Parties	Actions	Parties	Actions	Expenditures
Other Authorities	Rural Development Districts (ASA 20-1401 - 1424), Levee Districts (ASA 21-601 - 656), Irrigation Districts (ASA 21-91 - 934) have powers which affect instream flows.	Rural Development Projects. When levee, irrigation, or watershed improvement districts construct dams or manage lakes.	Conservation groups, State agencies, U.S. Fish & Wildlife Service.	Study and recommend management plans/project alternatives.	Local Boards of special districts.	Design and implement operating procedures or choose alternatives project.	Study, design implementation costs.
Utilities	EIS and hearing requirements for certificate of environmental compatibility can protect streams. Ark. Stat. Ann. 73-276.3, et seq.	Development of utilities.	Utility companies, State agencies, conservation groups.	Negotiate, assist in preparing EIS.	Public Service Commission.	Hold hearings, require plan changes.	EIS costs, hearing costs.
	Fish chutes may be required on dams. Ark. Stat. Ann. 73-2004.	Dams built since 1927.	Dam builders.	Petition Public Service Commission.	Public Service Commission.	Require a fish chute to be built and kept open.	Negotiation costs.

Table 4. (Concluded)

Title	Identification		Application			
	General description	Applicable situations	Initiation		Implementation	
			Parties	Actions	Parties	Expenditures
Riparian Rights (see page 79)	Riparian owners may protect reasonable uses and aid flow. [Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1956)].	Riparian uses affected by other users.	Riparian owners.	Negotiate with upstream water users causing harm.	Same.	Legal Costs.
The Public Trust Doctrine (see page 82)	Public trust doctrine can protect State natural resources.	Abuse of public lands or waters.	State agencies, local organizations, individuals.	Use this doctrine in suits to protect State resources.	Same.	Legal costs.

CONTENTS

	<u>Page</u>
FOREWORD.....	iii
EXECUTIVE SUMMARY.....	vi
 PART I: TEXAS.....	 1
INTRODUCTION.....	2
WATER RIGHTS.....	6
WATER QUALITY.....	22
OTHER STATUTES.....	25
LAND DISPOSAL OF MUNICIPAL WASTE WATER.....	28
 PART II: OKLAHOMA.....	 31
LETTER FROM OKLAHOMA WATER RESOURCES BOARD.....	32
INTRODUCTION.....	33
WATER RIGHTS.....	35
WATER MANAGEMENT.....	45
 PART III: ARKANSAS.....	 56
INTRODUCTION.....	57
ARKANSAS SOIL AND WATER CONSERVATION COMMISSION ADMINISTRATIVE PROGRAMS.....	58
GAME AND FISH COMMISSION.....	65
OTHER STATE AGENCIES.....	69
CITIES, COUNTIES, AUTHORITIES.....	75
UTILITIES.....	78
RIPARIAN RIGHTS.....	79
 PART IV: PUBLIC TRUST DOCTRINE.....	 82
THE PUBLIC TRUST DOCTRINE.....	83

PART I: TEXAS

INTRODUCTION

For effective protection of instream flows, it is essential to understand the authority and policies of Texas agencies having power to allocate water. There are several ways in which these agencies can protect streams.

DEPARTMENT OF WATER RESOURCES

The Texas Department of Water Resources (DWR) is the principal water resources agency of the State. It was created in September 1977, and fulfills the functions and duties of the former Texas Water Quality Board and the Texas Water Rights Commission. The DWR performs certain functions of the Texas Water Development Board, which continues in existence as an agency within the Department. The Texas Department of Water Resources has overall authority for water matters in Texas; water resources planning and management statutes have been unified in Texas, and both planning and management responsibilities are integrated in this Department. Throughout this text footnotes have been added to incorporate comments by the Executive Director of DWR which explain specific points and detail DWR interpretation of rulings, conditions, and events.

The Permits Section of the DWR processes applications for permits to appropriate water or to construct works to store, divert, or transport water. The Planning and Development Division works with the Corps of Engineers and the Bureau of Reclamation in planning water projects. The Executive Director is responsible for formulating, developing, and updating a comprehensive State water plan.

The Texas Water Development Board is composed of six members appointed by the Governor with the advice and consent of the Senate, who serve on a part-time basis. The Board has adopted rules necessary to establish and approve all general policies of the Department in order to carry out the duties of the Department under the Texas Water Code. These rules have been published and are of importance to persons interested in instream flows. The Board also makes loans, from monies derived from the sale of Texas Water Development Fund bonds, to eligible political entities of the State for construction of water development projects and sewage treatment facilities.

A monthly newsletter, entitled Texas Water, issued by the DWR, includes both water quality and water quantity information, and can be a fruitful source for instream flow interests. It periodically lists the reports available

through the DWR, such as reports for uses of water in various river basins, which may also be of great value.

Under Vernon's Texas Code Annotated (V.T.C.A.) Water Code § 16.131, et seq., the DWR may use its Texas Water Development Fund monies for projects, including reservoirs to store unappropriated State water and other water acquired by the State, if the public interest will be served by the acquisition of such facilities. Projects may include storage of water for gradual release to maintain downstream flow.

Unappropriated public water of the State stored by the Board in projects financed through the Texas Water Development Fund may be sold at a price to be determined by the Board (V.T.C.A. Water Code § 16.192). This provision may also permit an (expensive) augmentation of instream flow. Water stored in projects acquired through the storage acquisition program of the Water Development Fund must first be offered to the local entity which has participated in the project. If this entity does not purchase the water, the Board may then sell it to another entity. The permit issued for the project determines the purposes for which the stored water may be used. The Executive Director of the Texas DWR states: "A separate water use permit must be acquired by the purchaser, however, before any water can be diverted and/or used (Tx. Water Code § 16.193)" (Nemir 1983).

DISTRICTS

Many water districts and water authorities of various types exist in Texas. They may include River Authorities, water control and improvement districts, drainage districts, fresh water supply districts, improvement districts, levee improvement districts, municipal utility districts, navigation districts, and underground water conservation districts, among others. These districts have varying and sometimes overlapping responsibilities and powers, sometimes including the power to purchase, lease, and condemn right-of-way and property necessary for improvements.

After conservation interests identify the stream, segment, or system of concern, they can then review the powers of the specific water districts that can affect the stream. Opportunities to preserve instream values may exist under a number of these districts.

In Texas, the various river basin authorities are very powerful organizations. Some observers feel that the present adjudication process is in large part a codification of the apportionments made in the past by the river basin authorities. In any case, the adjudications will establish ongoing uses, and may release unused water to the stream.

PARKS AND WILDLIFE DEPARTMENT

The Texas Parks and Wildlife Department is largely a resource management and law enforcement agency. Within the comprehensive State plan for the

development of parks, however, the Department has the ability to acquire land, water, and interests in them for recreation areas and facilities, fish hatcheries, and wildlife management areas. It may also lease land and improvements for these purposes. Thus, while the Department may not be able to acquire water to protect instream flows apart from park facilities, downstream parks may be in a position to protect upstream flows. The Department has condemnation powers for programs developing outdoor recreation resources in cooperation with the Federal government in the administration of Federal assistance programs, such as the Land and Water Conservation Fund Act of 1965.

V.T.C.A. Parks and Wildlife § 11.032 sets up a special fish and game fund, largely from license sales. The fund may be used by the Parks and Wildlife Department for protection of wild birds, fish and game, research and management, and expansion and development of additional opportunities for hunting and fishing on State-owned land and water. There also exists a parks fund, a special boat fund, and a land and water conservation fund. Some of these funds could be used for streamside parks, water rights, and stream-related research.

The Parks and Wildlife Department conducts scientific studies and investigations of selected species of wildlife resources to determine such things as supply, environmental effects of harvesting, and any other factors or conditions causing increases or decreases of supply (V.T.C.A. Natural Resources § 61.051). This obligation of the Department makes it an important data collection agency in addition to the DWR.

Protection of instream flows in Texas is largely dependent upon the activities of one or another State agency. The more awareness that the DWR and Parks and Wildlife Department have of instream needs and values, the more their decisions will promote those values. The more cooperation that exists among Federal, State, and private organizations interested in conservation questions, the more effective their efforts will be. If instream flow needs and values are considered as a regular part of the ongoing work of the Department, those values add only a marginal amount of expense.

SOURCES

Statutes and cases summarized in the text are not listed here.

Burnitt, S., and C. Nemir. 1980. Texas Department of Water Resources. Personal communication. 15 July.

Caroom, D. P. 1980. Assistant Attorney General, Chief, Environmental Protection Division. Personal communication. 15 July.

Highham, J., W. W. Cole, Jr., and N. A. Funicelli. 1980. U.S. Fish and Wildlife Service, Austin Area Office. Personal communication. 15 July.

Hutchins, W. A. 1977. Water Rights Laws in the Nineteen Western States. Vols. I-III. U.S. Department of Agriculture.

King, K. 1980. Office of the Field Solicitor, U.S. Department of the Interior. Personal communication. 14 July.

Templer, O. W. 1980. The Evolution of Texas Water Law and the Impact of Adjudication. Paper presented at the 16th American Water Resources Conference. 12-16 October.

Texas Department of Water Resources. 1979. Texas Water Facts. January.

_____. 1980. General Requirements of Permit Applications.

_____. Texas Water: The Official Newsletter of the Texas Department of Water Resources. Various dates.

U.S. Water Resources Council. 1980. State of the States: Water Resources Planning and Management. April.

WATER RIGHTS

Every person interested in instream flows in Texas should be keenly aware that this is a dual-system State which is undergoing adjudications to create a unified system. Any generalization about water rights in Texas is probably wrong. It is necessary to look at specific streams and segments, and analyze both appropriative and riparian rights along and below that stretch. In some cases, instream flows can be protected by informed water rights holders downstream, at very little cost to the conservation agency. Rights can be acquired by conservation interests or conditioned by the DWR to protect stream flows, and new applications can be protested.

RIPARIAN RIGHTS

Opportunity

Government agencies, cities, districts or individuals which hold riparian water rights may be able to protect instream uses by requiring that water be delivered downstream for their use.

Background

Riparian water rights have existed in Texas in one form or another since 1840. Various court decisions, sometimes conflicting with or ignoring one another, have restricted and limited the nature of these riparian rights. There have been, however, very few riparian-versus-riparian lawsuits in the State to test aspects of the riparian doctrine such as superiority or priority among riparians. Cities may have water rights under either the riparian or appropriation doctrines. In addition cities may have access to water by contract.

Various cases have noted that a city may acquire use of water from a stream either as a result of deed and contract rights granted by other riparian owners or as an owner of riparian land. Because a key element of a riparian right is the principle of equality among riparians owners (contrasting to the principle of first-in-time, first-in-right among appropriators), a city which acquires riparian rights late in time may have acquired an extremely valuable right. This may change through adjudication, in which the State is attempting to assign a priority date to riparian owners based on their first use of water. Proper riparian uses of water may include fishing, attractive surroundings and

recreation, provided that preservation of the surroundings has some tangible use. If a city owned a riparian right as of 1969, it could protect instream flows for a considerable distance upstream, if it wishes to do so.¹

One reason for the riparian system's persistence has been that Texas, upon annexation as a State in 1845, retained its public lands and thus was not influenced by Federal law and the Federal land-ownership system which was so important in shaping the early development of the appropriation doctrine in California and elsewhere in the West. After the Appropriation Act of 1895, land acquired from the State has no longer carried riparian water rights. Instead, individuals must obtain water rights from the State through established statutory procedures. The superior position of preexisting riparian water rights has been uniformly recognized by all appropriation statutes. In situations involving direct conflict between riparian and appropriative rights, the courts have taken the position that the riparian doctrine is underlying and fundamental regarding the normal flow and underflow of the stream, but with the following restrictions: (1) riparian land owners claiming rights under Spanish and Mexican land grants do not have riparian rights to irrigate with river water unless expressly granted; (2) riparian rights do not accrue to the owner of any lands which passed out of State ownership after July 1, 1895; and (3) riparian owners have rights only to reasonable quantities of water for irrigation, stock raising, and domestic purposes. This restriction has been incorporated in the statutes as well. "Reasonable" for domestic and livestock could conceivably mean most of the flow of a small stream. Riparian

¹The Executive Director of the Texas DWR further explains this point by examining the specific Texas rules:

Riparian rights are based on ownership of property that abuts or crosses a stream, as opposed to being acquired as result of contracts. Additionally, while riparian rights may belong to a municipality they can be lost when the parcel of land is separated by grant or deed from the stream, with certain exceptions. The city cannot claim the right to supply the needs of all its inhabitants on the ground that the stream flows by the city; it must exercise its rights with regard to the correlative rights of other riparians. The one case, Grogan v. Brownwood [214 SW 532 (Tex. Civ. App. 1919)], that the author relies on for the proposition that a city can acquire riparian rights by contract does not stand for that proposition. The city was a riparian land owner in its own right and entered into a contract to protect the flow past the city with upstream riparians. The city did not acquire the riparian right by contract but contracted to protect that right. This one case also is a unique fact situation which may have little application in the rest of the State. So the author's statements in this paragraph overstate the extent or importance of municipal riparian rights. Further, the author's comments that riparian rights include fishing and recreation are accurate but fail to state these are lesser uses which may not be as protected as domestic and livestock uses (Nemir 1933).

rights are further compromised by the fact that they are entitled only to the "base flow." Because riparian stream owners are entitled to the base flow, uncertainty increases when the amount or extent of the base flow is in question.

The effective result of the ongoing adjudication of Texas rivers will be to convert riparian rights into a form of appropriative rights.² That is, riparian rights are being given priorities just as are appropriative rights (Burnitt 1981). Once this is done, and the amounts of water used are quantified, Texas will have a unified system which is administratively simpler. Once these rights are quantified, conservation interests will have the background data to make intelligent decisions about the best ways to protect stream uses.

APPROPRIATIVE RIGHTS

Opportunity

The appropriative rights application process can protect stream flows. Permits can be conditioned by DWR to require protection of certain flows, and present rights can be purchased for use instream (Tx. Water Code § 11.135, et seq.).³

Background

The Texas Department of Water Resources is responsible for supervising the acquisition of appropriative rights, adjudication of water rights, and the administration and distribution of water.

Among the purposes for which water may be appropriated at present are navigation, recreation and pleasure, public parks, and game preserves. In the preference and priority statutes, these uses fall at the end of the list.

Preferred Uses. The DWR must give preference to applications according to the order established by statute and to applications which will effectuate "the maximum utilization of water and are calculated to prevent the escape of

²The Executive Director of the Texas DWR states: Riparian rights under the adjudication act are recognized based on the date of first use and not the date of the grant. Therefore, some appropriations under the permit system may be senior to a recognized riparian right (Nemir 1983).

³The DWR has a storage requirement for permit applications, wherein the applicant has to make provision for storage sufficient to yield the requested annual diversion unless good cause for an exception to this requirement is shown (Board Rule 156.02.15.016). This may restrict the usefulness of protecting instream flows (Nemir 1983).

water without contribution to a beneficial public service." The statutory preference between competing applications is as follows:

1. Domestic and municipal uses, including water for sustaining human life and the life of domestic animals;
2. Industrial uses, being processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, including the development of power by means other than hydroelectric;
3. Irrigation;
4. Mining and recovery of minerals;
5. Hydroelectric power;
6. Navigation;
7. Recreation and pleasure; and
8. Other beneficial uses.
(Tx. Water Code § 11.024)

Decisions by DWR are not mechanical, but often require judgment and discretion. In City of San Antonio v. Texas Water Commission [407 S.W.2d 752 (Tex. S.Ct. 1966)], the court upheld the agency's decision to prefer a water right application of one city versus another where the preferred applicant would have used the water within its original basin and where the other applicant had alternative sources for its water demands. Fish and wildlife uses are low on this list and Texas streams are generally over-appropriated. Because of this new application policy, permits for instream uses, even if granted, may not result in holding much water in the streams unless senior users are downstream.⁴

In granting permits, the DWR is required to include consideration of preferred water uses, maximum water conservation and utilization, and the subjection of new appropriations (except for the Rio Grande) to the preferred appropriative rights of municipalities without compensation. This means that all appropriations (after May 1981) are granted subject to the right of any city or town to make further appropriations for domestic and municipal purposes without compensation (V.T.C.A. Water Code §§ 11.028, .024, and .027).

⁴Municipal appropriations may take precedence over senior users such as irrigation in times of low water availability (drought conditions). Although senior water rights may occur downstream, it does not necessarily mean they will be met if higher preferential users are permitted upstream (Nemir 1983).

These expansive noncompensable municipal water rights suggest an approach like the one applicable under the Pueblo water rights of California municipalities: So long as the water is put to a beneficial use a downstream municipality can, in effect, hold water in the stream for future needs and drought protection. While that water is in the stream, it will be available for fish and wildlife purposes upstream. The practical effect is similar to having an extremely large appropriator downstream. Streams of concern can be examined to see whether downstream municipalities may have this inexpensive, automatic, and extremely useful effect on streams that are desired to be protected.⁵

Diversions. Another potential approach would be to buy water rights which are dependent on the flow of the stream. This would mean purchasing a "diverting" appropriative right. Approval by the Commission to change the purpose or place of use is also required. It may also be possible to purchase a riparian owner's rights, where such owner is actually using the water, and do the same thing; it would seem safer to purchase appropriative rights. Once a water right has been purchased the Commission might approve a change of use which would return water to the stream and for use by fish. It would be necessary either to purchase a large downstream right or a series of rights along the stream, to avoid the problem of the right's being fulfilled just by local runoff. An advantage of this approach is that the holder of the water right is automatically notified of later appropriators and can participate in hearings on other rights.⁶

If water rights were purchased to meet the seasonal requirements of flows into bays and estuaries on the coast, major water impoundments would have to be constructed to release water during low flow conditions. Construction of these impoundments and storage of water therein would be expensive. In addition, in many river basins of the State there is insufficient "new" water available to grant appropriative rights for such impoundments.

⁵The Executive Director of the Texas DWR notes that: This ignores the statutory requirements of preferring uses that effectuate the maximum utilization of water, Water Code § 11.123, and of limiting use to the amount which can be beneficially used for the purposes stated in the permit, Water Code § 11.025. The appropriative right extends to the use of water only to the extent actually needed by the appropriator for beneficial use. Any surplus above the beneficial requirements of the appropriator must be returned to the stream, so as to allow the water to be used by other water rights holders for maximum utilization of water. The Wagstaff Act, Water Code § 11.028, has not yet been interpreted by the courts. While municipalities can store water for beneficial use, it is uncertain whether Wagstaff authorizes greater rights to municipalities when water is available (Nemir 1983).

⁶It should be noted that: Texas does not protect the level of the intake of an appropriator; it does protect the right to divert at a certain point on the bank of a stream. Streamflow restrictions (allowing a certain amount of water to pass the point of diversion) are designed to protect downstream water rights holders and not an appropriator (Nemir 1983).

Permits. In applying to the DWR for a permit, the applicant must describe the proposed facilities and the nature of the proposed use; he must also state the months or season the water is to be used if his application is for a seasonal permit, or must state the period of proposed use if the application is for a temporary permit. Accompanying maps or plats must indicate among other things the place of use, the point of diversion and the position of the watercourse. If it appears to the Commission that no unappropriated water is available, the application may be denied without a hearing. Otherwise, the DWR shall hold a hearing, after notice to each appropriator from the same water supply.

Before granting the permit, the DWR must determine whether the proposed application is detrimental to the public welfare. In making this determination, the courts have commented that the Texas DWR has very broad discretion, and that its powers extend far beyond the mere inventorying of unappropriated water.

In addition, since 1975, DWR must consider downstream effects:

In its consideration of an application for a permit to store, take, or divert water, the commission shall assess the effects, if any, of the issuance of such permit upon the bays and estuaries of Texas (V.T.C.A. Water Code § 11.147).

Also added in 1975 to the public policy provisions of the statutes was the statement that:

It is the public policy of the state to provide for the conservation and development of the state's natural resources, including: ...

(6) the maintenance of a proper ecological environment of the bays and estuaries of Texas and the health of related living marine resources (V.T.C.A. Water Code § 1.003).

Permits may be forfeited through the inaction of the permittee or for ten years of nonuse. The DWR has the power to determine if an adjudicated or permitted water right has been abandoned or cancelled.

The process through which permits are granted is thorough and careful; in many cases it can operate to benefit streams by providing regularity in the use of water. This may create some dependable return flows for certain streams. In addition, DWR has the power to impose conditions on permits for appropriation, which can be structured to protect some stream flow.

The DWR rules governing issuance of water permits include the following:

.001. PERMIT SUBJECT TO PRIOR AND SUPERIOR RIGHTS. Every permit to appropriate state waters granted by the Commission shall be conditioned on its being subject to all prior and superior rights of others using water on the stream or other source of supply.

.002. OTHER PROVISIONS. The Commission will incorporate in every permit any condition, restriction, limitation, or provision reasonably necessary for the enforcement and administration of the water laws of the State and the rules of the Board.

.003. ACCEPTANCE OF PERMIT. Acceptance of the permit by the permittee will be an acknowledgment and agreement that the permittee will comply with all terms, provisions, conditions, limitations and restrictions embodied in such permit (Water Development Board Rules 156.02.70; Tx. Admin. Code § 303.151 - 153).

Example

The Department of Water Resources is permitted to grant applications for appropriation of water only if: (1) unappropriated water is available; (2) there is beneficial use demonstrated; (3) the right will not impair existing rights; and (4) the proposed appropriation is not detrimental to the public welfare. Implicit in this power is the authority to place conditions on permits or to deny permits. Conditional permits can be useful in protecting instream flows, estuaries, and related stream values. Permits might be granted subject to the condition that they are subordinate to stream needs as may be subsequently determined. If later studies determine that the stream needs a certain amount of water, the permit may be amended by reducing the amount of water covered by it. The Texas Water Rights Commission, predecessor to the Texas Water Commission within the Department of Water Resources, followed this course in granting a permit for the Palmetto Bend Dam and Reservoir project. The project was granted with the provision that: "...the Texas Water Rights Commission may, upon application and proper order, authorize and order the release of state water for any beneficial purpose, including releases of water for research purposes in the Lavaca-Matagorda Bay and Estuary System" (Texas Water Rights Commission, No. 2776, 25 September 1972). Nemir (1983) reports that the permit does not specifically provide for "maintenance water for the B & E system."

Evaluation

Conditioning or denying permits involves some cost, because it requires the DWR to review each application in light of its potential effects downstream other than to diverters of water. This adds to the cost of processing the permit application within the Department. Because water is a scarce resource in much of Texas, practically every permit that comes in will need close attention if this approach is followed. It might be possible to place some of the costs of determining the needs of the stream on the potential appropriator by requiring appropriators to supply information about instream needs below their point of diversion.

Opportunity

When a proposed appropriation is submitted to DWR, other appropriators and interested agencies can protest the granting of the permit. This process

offers a way to prevent further withdrawals from a stream, and may be cost-effective on certain streams (V.T.C.A. Water Code §§ 11.132, 11.133, et seq.).

Background

In many river segments there is insufficient water to meet present appropriations if they were fully exercised. As a result, every appropriation beyond the present ones is an inroad into what water is left in the stream.

Example

The Texas Park and Wildlife Commission filed as intervenor in February 1977, before the then Water Rights Commission, in an application involving the Coleta Creek Cooling Pond project, a 35,000 acre-foot impoundment. Although the Parks and Wildlife Department withdrew its intervention before the administrative hearing began, the applicants provided instream flows for downstream fish on Coleta Creek as a result of the intervention.

Evaluation

To oppose applications for appropriations of water would be expensive in time and money, even if only major consumptive users were targeted for protest. Reviewing every application submitted to the Department would be very expensive; even a focus on major applications for consumptive uses would create large manpower expenses. In addition, evidence concerning the affected stream would have to be reintroduced in every proceeding before the Department.

OTHER APPROACHES USING WATER RIGHTS

Opportunity

Additional provisions of the Water Code can help promote instream values. Some of these involve the ongoing work of the DWR, while some require the active participation of conservation-minded appropriators.

Background

Geothermal Resources. Exploration, development, and production of geothermal energy are regulated by the Railroad Commission, which in consultation with the Texas Department of Water Resources, is to produce rules governing this area (V.T.C.A. Natural Resources § 141.001, et seq.; The Geothermal Resources Act of 1975). The rules are to protect the environment against damage as a result of this development. "Geothermal associated resources" includes hot water, but the statutes make no provisions for disposition of the water resulting from geothermal development. This absence of specific provision probably means that the Water Commission has authority over the water after it has been produced and entered a water course, although the statutes could be interpreted as conflicting with one another.

In some basins the possibility of augmenting or maintaining downstream flows with geothermally produced water, which may not be appropriated when produced, may be a viable approach if the water is not too saline.⁷

Transportation. Appropriators can use streams and rivers for transportation and storage of water, rather than artificial ditches or reservoirs (V.T.C.A. Water Code §§ 11.042 and 11.091) provided that the banks and beds of any natural stream in the State may be used for the purpose of transporting stored water from the place of storage to the place of use or to the point of diversion. No person may appropriate or interfere with the delivery of these "stored" waters. If a downstream appropriator can make use of a natural stream for shipping substantial continuing amounts of water, he will in effect have provided a free instream flow for the use of fish and wildlife during the process. This transportation process may be lengthy, and may provide instream flows for substantial segments of streams. This opportunity does not, however, provide a certain source of supply because such transportation depends on timing of a beneficial use.

Municipalities can, on occasion, convey water in streambeds for downstream use. Corpus Christi has a DWR permit, granted in time of emergency, to pump well water into some dry stream beds to convey the water downstream to the city. Some personnel in DWR do not feel this is a viable or common strategy for instream flows.

The sale of a permanent water right is forbidden unless the seller has received a permit from the DWR authorizing the use of the water for the purposes for which the right is to be conveyed [V.T.C.A. Water Code § 11.084 (see also § 11.122)]. This provision provides the DWR with an automatic review of all transfers of water rights, and enables it to offer some protection to instream flows. Prohibiting transfers helps maintain the regime of a stream.

No water may be diverted from one watershed to another if it injures any person in either watershed; a permit is also required from the DWR before such a transfer is made, and a hearing is required with notice to the public (V.T.C.A. Water Code § 11.085).

⁷The Executive Director of the Texas DWR comments that: The State of Texas now faces serious problems as a result of over-drawing existing groundwater sources. To place further demands on these aquifers for the sole purpose of maintaining a continuous flow in historically intermittent streams, could seriously limit the usable life of the aquifer. The author also notes that hypersaline conditions might prevent its use, but makes no mention of other quality parameters such as temperature. Many of the aquatic communities, especially those found in the western part of the State, have adapted to specific conditions, with very little tolerance for change. Any alteration of ambient conditions, such as a significant rise in water temperature, could lead to major adverse impacts (Nemir 1983).

Eminent Domain. All political subdivisions of the State and governmental agencies enjoy the power of eminent domain for domestic, municipal, and manufacturing purposes, and for other purposes authorized by the code, including the irrigation of lands (V.T.C.A. Water Code § 11.033). Section 11.035 also grants a private right of condemnation to appropriators for right-of-way for pumping plants, intakes, headgates, and storage reservoirs; if the appropriator is a private party, he must apply to the DWR for condemnation.

These condemnation powers should be borne in mind by conservation interests who wish to appropriate water to preserve flows in streams and who need access to and from water.

ADJUDICATION

Opportunity

General adjudications may be held on the motion of DWR or petition by ten or more claimants (V.T.C.A. Water Code § 11.304, et seq.). These adjudications may be for an entire stream or any segment of a stream.

Background

The completed adjudications result in court decrees which indicate exactly where the water is, who controls it, and where it is going. Adjudications which limit waste of water may actually result in more water being left in the stream. A further advantage of the adjudication process being carried out by the State is that the State bears the expense.

Before 1968, the Water Commission had incomplete records of the number of riparian rights claimants in any river basin, the extent of their claims, or the amount of water they were using each year. This sizable, unknown riparian element made it difficult to have coordinated and efficient administration and management of the State's surface water resources.

The Water Rights Adjudication Act, designed to remedy this untenable situation, was passed in 1967 (V.T.C.A. Water Code § 11.301 - 341). Its main purposes are the eventual merger of all surface water rights claims (riparian and appropriative) into the permit system, and the final adjudication of all surface water rights. Under the Act, all unrecorded claims (such as those of all riparians and some unrecorded certified filings) were required to be filed with the Water Commission. Minor exceptions were made for those using only small quantities of water for domestic and livestock purposes. Claims were limited to the maximum amount of water used during any year of the base period, 1963 through 1967.

The actual process of water rights adjudication started shortly after the 1969 deadline when the Water Commission had received most unrecorded claims. The adjudication process is very complex, consisting of a number of administrative and judicial steps. First, the Commission holds a series of hearings and makes preliminary determinations before arriving at an administrative

determination of water rights for each river basin or subbasin. The Commission's findings are then filed in a district court where they are reviewed and approved or modified. Appeal can be taken from the preliminary hearings, and later from the district court determination. After adjudication is completed, certificates of adjudicated water rights are issued to successful claimants, and a watermaster system may then be established to supervise and administer the court order.

This lengthy procedure, combining administrative and judicial elements, is an attempt to ensure that all claimants are adequately heard. Adjudication under the Act will eventually result in riparian rights for the first time being limited to a specific maximum quantity of water, thus greatly increasing the potential for more effective surface water resource administration and management in Texas.

Because the McCarren Amendment allows joinder of the United States to water rights adjudication actions, the Attorney General has urged the Texas Department of Water Resources to ensure that the ongoing adjudications include all outstanding Federal claims. Clear quantification of all Federal claims in the adjudications should improve administration of water rights in Texas and may thereby benefit instream flows. Such Federally constructed but unpermitted dams and reservoirs as Lakes Texoma, Sam Rayburn, and Whitney, fall into the category of water that can be dealt with under the present adjudications.

As it proceeds with adjudication, the Water Commission is also attempting to cancel or reduce any unused or partially-used appropriation permits. Since all water users must respond to the notice of adjudication, an important outcome of the process is the discovery of existing water rights subject to cancellation. Such unused permit allocations of water have sometimes been referred to as "paper rights." Some paper rights were obtained under the loosely-administered certified filing system and others represent later allocations made by the Commission and its predecessor agencies.

In the past, elimination of unused permits was rarely attempted in contested cases because of several glaring errors in the cancellation statute. However, a Supreme Court decision, Texas Water Rights Commission v. Wright (1971), which upheld administrative cancellation of permits after ten years of continuous nonuse, has enabled the Commission to move more rapidly in cancelling or reducing unused claims, so that few should remain after adjudication.

Example

The Texas Parks and Wildlife Department, concerned with protecting the State's fish and wildlife, has recognized that streamflow during droughts and fresh water inflow into coastal bays and estuaries are being threatened by upstream water diversions and water rights applications. In January 1977, the Department, represented by the Attorney General, filed a claim for water rights for fish and wildlife as a part of the adjudication of water rights in the Medina River subbasin of the San Antonio River basin. The Department later withdrew its claim, however, and eventually decided not to actively

enter adjudication proceedings. This decision may not be irrevocable; the adjudications may offer the Department the opportunity to seek instream rights.

Rather than adjudicate surface water rights for each major river basin simultaneously, the Water Commission initially proceeded on a "hot spot" basis, determining water rights in small subbasins which had long histories of recurring water rights disputes. The first such subbasin for which adjudication was ordered was the Cibolo Creek watershed, a perennial problem in the San Antonio River basin. Adjudication is moving from the water-deficit arid and semi-arid portions of the State into the more humid regions of Central and East Texas. This progression allows the DWR a better opportunity to apply and test the adjudication procedure in those watersheds with the smallest number of water rights claimants.

The Statewide adjudication process is about 80% complete (Burnitt 1981). The Department anticipates 85% completion by 1983 and hopes to have adjudication completed in 1985.

Evaluation

Benefits of vigorous participation in the adjudication process include its relative lack of expense to the participants. Participation also means that major appropriative claims within the basins being adjudicated can be reviewed to determine whether the water has been put to beneficial use and other rights have indeed been protected.

The adjudication process may result in a confirmation of the apportionments already made by river authorities in some basins.

GROUNDWATER

The creation of underground water conservation districts is provided for by statute. These districts govern areas which are designated by the Department of Water Resources. The districts are organized upon petition, and may issue permits for drilling wells and develop other regulations designed to prevent waste. These districts, however, do not restrict the production of wells pumping less than 100,000 gallons per day, except for the Harris-Galveston Coastal Subsidence District which regulates all pumpage in two counties under a permit system.

Field work in support of a \$1.6 million study of groundwater resources of the High Plains has been completed, bringing the study midway to completion. Scheduled to be finished in late 1981, the study is a cooperative effort of the Texas Department of Water Resources, the U.S. Geological Survey, three High Plains water conservation districts, and Texas Tech University.

Opportunity

Because groundwater in Texas is not subject to regulation by DWR or under rules against "waste," it may be a source of water to augment or increase streamflows.⁸

Background

Groundwater in general (excluding definite underground streams, if they exist, and the underflow of surface streams) is not covered by the appropriation statutes.

The Texas Supreme Court has stated that an owner of land has a legal right to take all the water he captures under his land. He is not bound to use the water on the land, or even to use it reasonably. While the extractor is limited to lawful uses, lawful uses may include transporting water from artesian wells down a natural stream bed and through lakes, resulting in enormous natural losses in transit. Waste is not to be decided by the percentage of loss in transit.

The DWR has statutory authority to enforce rules and regulations for conserving, protecting, preserving, and distributing underground percolating water in the State. Artesian wells, however, may be drilled on private property without permits from the Commission (V.T.C.A. Water Code § 11.201, et seq.). There are certain reporting requirements. Water from artesian wells may be used for the propagation of fish without constituting waste of water.⁹

Example

In Texas, the general rule is that a landowner may pump as much water as he wishes from a well located on his land regardless of waste or consequences to others. In City of Corpus Christi v. Pleasanton [154 Tex. 289, 276 S.W.2d 798 (1955)] this rule operated to benefit instream values. Corpus Christi

⁸The Executive Director of the Texas DWR comments: Mining of an aquifer to benefit one riverine system could be detrimental to another. Lowering of the water table to supplement streamflows could also jeopardize its value as an existing source of water for municipalities. Because of the growing concern being expressed over the availability of potable water for the State, legislation may be introduced to establish underground water conservation districts with more authority to regulate groundwater pumpage. Increased regulations may make groundwater unattractive to augment stream flows (Nemir 1983).

⁹The Executive Director of the Texas DWR states: The author implies artesian water may be used for the propagation of fish without constituting waste. Section 11.205 must be read as a whole, however, and recognize that it may be waste if the landowner allows the water to run off the owner's land. According to the statute, artesian water may be used on the landowner's property for the propagation of fish (Nemir 1983).

owned four large wells capable of pumping ten million gallons of water a day near Pleasanton. From these wells, water was discharged into the Nueces River and conducted by the river channels 118 miles to a settling basin, where it was held for use by the city. Evidence was presented at the trial that between 63% and 74% of the water placed into the river for transportation was "lost" through evaporation and seepage. This loss was not held to constitute "waste" within the meaning of Texas Water Code Annotated § 5.205 (1972), which forbids discharge of artesian well water into natural water courses except for purposes and manners lawfully permitted. The court held that as long as any well water discharged into the river was put to a beneficial use at the end of its journey, the entire discharge was lawful. As cities range farther and farther afield in their continuing quest for reliable sources of water, pumping of well water and transportation by natural channels may be the most sensible means of providing water for municipal needs.¹⁰ Because this approach can also provide substantial benefits for the waterway used as a conduit, conservation interests may wish to suggest this approach to municipalities seeking water sources.

Most cities pipe directly out of their reservoirs and do not use streams for transportation of water. It might be possible for them to do so; however, municipalities often go in as partial sponsors of reservoir projects.

Evaluation

Because groundwater enjoys special exceptions to the reasonable use requirement imposed on appropriative rights, groundwater may be a useful source in Texas of instream flows, when it is put into natural stream beds or a series of lakes for transportation to a downstream use. For instance, a downstream city may purchase or otherwise acquire wells far upstream, put the water into a natural channel, and take it out at the city. This procedure could reduce costs to the city, perhaps have beneficial effects on water pollution within the stream in transit, and produce a continuing source of instream flow for fish and wildlife purposes.

SOURCES

Statutes and cases summarized in the text are not listed here.

Burnitt, S. 1981. Texas Department of Water Resources. Personal communication. 3 September.

¹⁰The Executive Director of the Texas DWR comments that: The key to meeting the State's projected water needs lies with the development of surface water supplies to augment the existing use of groundwater. Opportunities to provide releases for fish and wildlife maintenance may be included as one of the beneficial uses of multi-purpose reservoirs. Special conditions such as minimum flow releases have been included in recent water permits for major reservoirs (Nemir 1983).

- Burnitt, S., and C. Nemir. 1980. Texas Department of Water Resources. Personal communication. 15 July.
- Caroom, D. P. 1978. Assistant Attorney General, Chief, Environmental Protection Division. Letter to J. Leshe, Associate Solicitor, U.S. Department of the Interior. 28 November.
- _____. 1979. Assistant Attorney General, Chief, Environmental Protection Division. Letter to C. Nemir, Assistant Executive Director, Texas Department of Water Resources. 30 August.
- _____. 1980. Assistant Attorney General, Chief, Environmental Protection Division. Personal communication. 15 July.
- Caroom, D. P., and S. Newsom. 1976. Memorandum to P. Johnson, Chairman, Parks and Wildlife Commission, re: Guaranteed Minimum Flow for Fish and Wildlife. 1 December.
- Claim of the Texas Parks and Wildlife Department for water rights. 1977. In Re: The Adjudication of Water Rights in the Medina River Watershed of the San Antonio River Basin before the Texas Water Rights Commission, August, Texas. 31 January.
- Dallas Times Herald. Sunday, 25 May 1980, B-3. Conflicts Brewing Over Use of Texas Lake Water.
- Highham, J., W. W. Cole, Jr., and N. A. Funicelli. 1980. U.S. Fish and Wildlife Service, Austin Area Office. Personal communication. 15 July.
- Hutchins, W. A. 1977. Water Rights Laws in the Nineteen Western States. Vols. I-III. U.S. Department of Agriculture.
- Johnson, C. W. 1973. Legal Assurances of Adequate Flows of Fresh Water into Texas Bays and Estuaries to Maintain Proper Salinity Level. Houston Law Review 10:589.
- Jones, L. 1980. Fort Worth Star Telegram. Associated Press article. 12 May.
- Motion to File Claim Out of Time. 1977. In Re: The Adjudication of Water Rights in the Medina Watershed of the San Antonio River Basin before the Texas Water Rights Commission, Austin, Texas, filed by the Texas Park and Wildlife Department. 28 January.
- Nemir, C. E. 1983. Letter from Executive Director, Texas Department of Water Resources to Berton L. Lamb, Western Energy and Land Use Team, with attachments. 2 February.
- Newsom, S. 1977. Brief to Parks and Wildlife Commission re: Assuring Minimum Streamflows for the Maintenance of Fish and Wildlife Habitats. Environmental Protection Division. 8 March.

Notice of Intervention of the State of Texas before the Federal Energy Regulatory Commission. 1979. December.

Office of the Governor of Texas. 1972. Management of Bay and Estuarine Systems, Phase I. Texas Department of Water Resources.

Response to the U.S. Department of the Interior, Fish and Wildlife Service and Heritage Conservation and Recreation Service, to the answer of Brazos River Authority to Petition Recommending Establishment of Minimum Flows. 1980. July.

Templer, O. W. 1980. The Evolution of Texas Water Law and the Impact of Adjudication. Paper presented at the 16th American Water Resources Conference. 12-16 October.

Texas Department of Water Resources. 1979. Texas Water Facts. January.

_____. 1980. General Requirements of Permit Applications.

_____. Texas Water: The Official Newsletter of the Texas Department of Water Resources. Various dates.

The Tuesday Newsletter. 1978. National Association of Conservation Districts. No. 14.

U.S. Water Resources Council. 1980. State of the States: Water Resources Planning and Management. April.

WATER QUALITY

WASTE TREATMENT

Opportunity

Under the Texas statutes, it appears possible for cities and industries to purchase or otherwise acquire instream water for the purpose of meeting their waste treatment requirements. If the water is purchased upstream of the city, and travels downstream to the city, while it is within the stream the water is providing a substantial source of instream flow (V.T.C.A. Water Code § 26.023, et seq.). A permit or amended permit may be necessary for this opportunity.

Background

The DWR is responsible for establishing the level of quality of State waters and controlling that quality. This includes the duty to prepare general comprehensive plans for the control of water quality, to initiate enforcement proceedings, and to make rules. The Texas Water Development Board (WDB) on behalf of the DWR, has the exclusive authority to establish water quality standards for all water in the State of Texas. The Texas Water Commission, on behalf of the DWR, has the power to issue permits for the discharge of waste into State waters. The DWR is also to develop water quality management plans for areas of the State, and may seek assistance from local governments, regional planning commissions, and other State agencies, colleges and universities. These plans may be furnished to the Federal or other Federal officials. The DWR exercises continuing supervision of comprehensive plans prepared by river authorities and other entities for water quality management and abatement of pollution under V.T.C.A. Water Code § 30.106.

The DWR is to develop a Statewide water quality plan to establish water quality levels and control waste discharge. The DWR and the Department of Health represent the State interest in all Clean Water Act agencies which must have a State representative. In addition, the DWR is to develop comprehensive water management plans in regional systems. This is the agency which Texas has offered as the key Section 208 agency under the Clean Water Act of 1977. For enforcement the statute takes into account water quality needs of the affected waters, as well as existing technology (V.T.C.A. Water Code § 26.121).

There is no automatic process by which the DWR reviews appropriation permit applications for water quality effects. The DWR could administratively provide for this safeguard.

The DWR and, as an alternate, the Parks and Wildlife Department are authorized to enforce all the provisions of the Texas Water Quality Act (V.T.C.A. Water Code § 26.123 - 124). The State Department of Health is also authorized to make recommendations to the DWR on health matters relating to the water quality in the State. The Texas Railroad Commission, on the other hand, is solely responsible for the control and disposition of waste and pollution associated with oil and gas production. This Commission may issue permits for the discharge of oil and gas waste, so long as this discharge meets the water quality standards established by the WDB.

Example

Wastewater return flows presently constitute some part of the total surface water supply in most river basins of the State, and constitute a potentially significant part of streamflows in almost every area of the State during moderate to low-flow conditions.

Under the Clean Water Act (33 U.S.C. 1242), National Pollution Discharge Elimination System (NPDES) permits can be conditioned on various factors. On water quality limited streams, there may be incentive for potential dischargers to purchase upstream water rights and leave them in the stream. Dischargers would then know what degree of treatment is required by the discharge. They could avoid adding more extensive treatment processes as flows disappear. The importance of this economic fact is that in States where water rights are transferrable, rights may be purchased far upstream (depending on where they are the cheapest) and, while traveling downstream, provide a fairly stable flow. However, as the Executive Director of the Texas DWR states: Discharge permits place restrictions on the discharge at the discharge point, not on the discharge after it has been mixed with the stream. Dilution is not considered in the discharge requirements, so purchasing upstream water may not enhance or affect the permit's discharge requirements, or make it more economical for the discharger.

One example of this approach is the present ongoing discussion between the EPA and some towns and cities in other States to decide whether it would be possible for cities to purchase instream flow rights with waste water treatment construction grant funds. The Construction Grant Program in the Clean Water Act was designed to help cities construct sewage treatment plans.

Evaluation

This approach would not be economically feasible for cities and industries that have not yet reached their base level of treatments. For industries which are obliged to go beyond their base level of treatment because the water quality standards in the stream must be protected or because the stream is low, however, it would be cost effective to purchase upstream water rights to raise the level of the stream. This purchase would guarantee that in future

years the requirements on that industry would not be even more stringent. The Texas Department of Water Resources reports that this probably is not feasible in Texas (Burnitt 1981).

SOURCES

Statutes and cases summarized in the text are not listed here.

Burnitt, S. 1981. Texas Department of Water Resources. Personal communication. 3 September.

Burnitt, S., and C. Nemir. 1980. Texas Department of Water Resources. Personal communication. 15 July.

Hutchins, W. A. 1977. Water Rights Laws in the Nineteen Western States. Vols. I-III. U.S. Department of Agriculture.

Nemir, C. S. 1983. Letter from Executive Director, Texas Department of Water Resources to Berton L. Lamb, Western Energy and Land Use Team, with attachments. 2 February.

Office of the Governor of Texas. 1972. Management of Bay and Estuarine Systems, Phase I. Texas Department of Water Resources.

Texas Department of Water Resources. 1979. Texas Water Facts. January.

_____. 1980. General Requirements of Permit Applications.

_____. Texas Water: The Official Newsletter of the Texas Department of Water Resources. Various dates.

U.S. Water Resources Council. 1980. State of the States: Water Resources Planning and Management. April.

OTHER STATUTES

SANCTUARIES

Opportunity

Several statutes address the special needs for protection of fish and wildlife in a growing State. The Parks and Wildlife Department can include streamflow needs in departmental decisions on sanctuary selection and maintenance.

Background

Texas has an Endangered Species Act of its own, which includes United States endangered species as well as Texas endangered species (V.T.C.A. Parks and Wildlife § 68.001, et seq.). The powers of the Department under this Act include "habitat acquisition and improvement," as well as collection of information, research, and law enforcement.

Departmental policy may determine whether habitat acquisition includes purchase, lease, or other acquisition of water rights for instream flows to protect endangered fish or other species, such as turtles. Use of the Endangered Species Act to support acquisition of water rights by the Department may be useful for specific streams.

Texas also provides for the establishment of hatcheries, reservations, and fish sanctuaries (V.T.C.A. Parks and Wildlife § 81.004, et seq.). These may be acquired by condemnation, in the same manner as railroad condemnations. The statute requires the Parks and Wildlife Department, with the approval of the Commissioners Court of each county, to set aside and reserve portions of each public fresh water stream or other body of water as fish sanctuaries in the county, with the purpose of increasing and preserving the supply of fresh water fish. These sanctuaries may be set aside for no longer than five years at a time, and no more than 50% of the public fresh water in any one county may be set aside as a sanctuary. The sanctuaries are to be set aside by published proclamations signed by the Commission.

Sanctuaries offer an unparalleled opportunity to preserve both waters and fish in critical counties. The department to make application to is, of course, the Parks and Wildlife Department. The question arises as to the effect of these sanctuaries on upstream water rights: Who will bear the cost

if the use of an upstream water right dries up a proclaimed fish sanctuary? The statute does not address this question.

The Parks and Wildlife Department may also establish a system of scientific areas for scientific research and preservation. For this system, it may acquire interest in real property by purchase or gift, but not by condemnation. Funds must be specifically appropriated by the legislature for these areas of scientific study, and may not be taken from other general funds of the Department. In popular cases, an appeal to the legislature for appropriation may result in substantial support for certain scientific areas. This is an opportunity for State agencies and private conservation groups to work together.

Special statutes govern the various specific named statutory sanctuaries and preserves around the State. Each preserve or sanctuary can be examined for its effects on instream flow upstream from and within the sanctuaries.

A number of special and local laws exist in Texas for each separate county with respect to parks and wildlife. Because Texas includes some 253 counties, examination of these special acts (to be found in Vol. 2 of the Parks and Wildlife Code, V.T.C.A.) must be made by persons interested in specific counties.

The Texas statutes also provide for cooperation with the Federal government under the Fish Restoration Projects Act, the Commercial Fisheries Research and Development Act of 1964, Wildlife Restoration Projects Act, and 16 U.S.C. 703, et seq., the Federal act to meet the obligations of the United States under the Migratory Bird Treaty with Great Britain.

COMPACTS

Opportunity

A stream of particular interest for instream flows may be hydrologically connected to compact rivers. The terms of the compact may allow some protection of instream uses.

Background

Interstate river compacts entered into by Texas include the Rio Grande compact, the Pecos River compact, the Canadian River compact, the Sabine River compact, and the Red River compact. Delivery requirements should be examined to ensure that Texas has received its fair share under the compact. Negotiation and possibly even litigation may be entered into to ensure that these requirements are met, and the needs of both the instream uses and downstream appropriators are met. These compacts are found in the Texas statutes at V.T.C.A. Water Code § 41.001, et seq.

SOURCES

Vernon's Texas Code Annotated Parks and Wildlife § 68.001, et seq.; § 81.004, et seq.

Vernon's Texas Code Annotated Water Code § 41.001, et seq.

LAND DISPOSAL OF MUNICIPAL WASTE WATER

EXCHANGE OF USE

Opportunity

The use of municipal water for irrigation can be of assistance in maintaining instream flows in two ways: (1) Land which is irrigated by municipal waste is not drawing on surface or groundwater supplies as an independent source of water; in other words, the city's water is being used twice, and the irrigating farmer is not imposing a drain on the water source. (2) Irrigation use of municipal water reduces the pollution load that streams might otherwise have to carry. It might be useful to support the application of municipal waste water to city or private land as a means of improving and maintaining stream flows. (See also municipal strategies above, under Riparian Rights, Appropriative Rights, Other Approaches, and Groundwater.) It should be noted that a permit or an amended permit may be necessary for this opportunity.

Background

The application of waste water to agricultural land from municipal treatment plants and industrial sources is not new but has been practiced both in the United States and in foreign countries for many years. When waste water is applied to the soil-plant environment, suspended solids and nutrients are filtered out, and the water is either utilized by crops or percolates to subsurface drains or to groundwater. The use of waste water for irrigation purposes has proved beneficial on a small scale. The opportunities suggested here could be applied to municipal wastewater discharges which contain few industrial wastes. However, consideration should be given to the contamination of groundwater supplies from the use of waste discharges for irrigation purposes (Nemir 1983).

As a result of the Clean Water Act, many communities are upgrading their waste water treatment plants. Land application of waste water is an alternative treatment plan which is economically attractive to small rural communities.

In Michigan, 5,000 acres of once unproductive land in Muskegon County is now growing corn as a result of irrigation by waste water from nine communities. In these communities, the waste water is treated through secondary treatment prior to application on the land. Lagoon treatment and storage

systems are generally used for this purpose, which provides for stabilization of organic materials and partial destruction of disease-causing organisms. When sprinkler application methods are employed, disinfection of the waste water is required. When municipalities own their own application sites, they often use solid set irrigation systems which can be completely automated, while for private farming traveling irrigation equipment is more suitable.

From the irrigator's point of view, the primary agricultural benefit of applying waste water is the water itself. Nutrient content in the water can improve crop yields and reduce the need for fertilizers, but the real impact on production comes from the irrigation. Waste water application can easily be adapted to private agriculture through agreements between the community and the farmer. These agreements can include purchase and lease back, purchase and resale on condition, negative easements, contracts, and the establishment of waste water cooperatives.

Example

Lubbock, Texas, has for forty years reused its sewage by sending the treated effluent from the city treatment plant to a nearby farm where it is managed for irrigation or disposal. This system handles twenty million gallons of effluent daily.

On the Texas High Plains, this water is particularly useful and its use for crop land irrigation (in this case, cotton) affords a water source to the irrigator without further drops in the water table.

Lubbock, a nearby college, and the Environmental Protection Agency have arrived at an agreement to develop a new effluent irrigation system ten miles south of the city on four thousand acres which have been virtually dry in recent years and which have never been irrigated by municipal waste water.

Evaluation

In every case, assistance and cooperation may be needed from local zoning, nuisance, and health codes. The conservationist who supports the program should seek the early involvement of local officials to ensure that the process is fully understood before a campaign is begun. It may be wise to restrict the type of crop grown to one which is not intended for human consumption in raw form. The main crop grown on the fields irrigated with Lubbock waste water, for example, is cotton.

Key factors include:

A long-term contract between the city and the irrigator.

Close control of municipal effluent uses so that toxic chemicals or heavy metals are not introduced.

Adequate storage and water routing facilities so that several day's water can be held when weather conditions prevent disposal on the land.

Land with less than one percent slope, so that water can be applied quickly and uniformly over the fields with reduced danger of runoff into nearby surface water supplies.

High soil organic matter levels to improve water intake rate, soil aeration.

Proper crop management to maximize water and nutrient intake.

Matching the type of crops grown, crop rotation, and acreage irrigated to the volume of water in the system.

SOURCES

Statutes and cases summarized in the text are not listed here.

Burnitt, S., and C. Nemir. 1980. Texas Department of Water Resources. Personal communication. 15 July.

Michigan Farm Bureau. 1977. Water Rights Task Force Report. Extension Bulletin E-1138, Natural Resources Series. Cooperative Extension Service, Michigan State University.

Texas Department of Water Resources. 1980. General Requirements of Permit Applications.

PART II: OKLAHOMA



JAMES R. BARNETT, Executive Director
MICHAEL R. MELTON, Assistant Director

OKLAHOMA WATER RESOURCES BOARD

P.O. BOX 53585 • 1000 N.E. 10TH STREET • OKLAHOMA CITY, OKLAHOMA 73152 • (405)271-2555

June 28, 1983

Mr. Ralph O. Morgenwech, Team Leader
United States Fish and Wildlife Service
Office of Biological Services
Western Energy and Land Use Team
Drake Creekside Building
2625 Redwing Road
Fort Collins, Colorado 80526

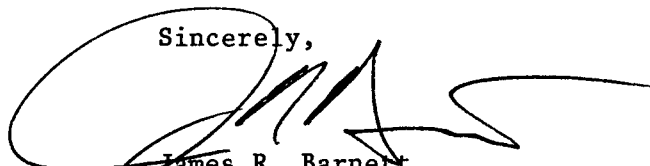
Re: Final Draft, "Opportunities
To Protect Instream Flows. . ."

Dear Mr. Morgenwech:

We have reviewed the final draft of the above referenced report and certainly appreciate being afforded the additional opportunity to review it prior to final publication.

While it is apparent that a great deal of time, and effort has gone into the writing of this report and while we note that several of our earlier comments have been incorporated into the most recent draft, the report still contains shortcomings of such a magnitude as to forestall our endorsing the author's views, conclusions and recommendations. Nevertheless, we do believe that those interested in this topic will find the report to be an interesting treatment of an important subject.

Sincerely,



James R. Barnett
Executive Director

JRB/ss

GERALD E. BORELLI, Chairman
EARL WALKER, Vice-Chairman
L. L. MALES, Secretary

ERNEST R. "Jack" TUCKER, Member
JOHN B. JARBOE, Member
ROBERT S. KERR, JR., Member

R. G. JOHNSON, Member
RALPH G. McPHERSON, Member
GARY W. SMITH, Member

INTRODUCTION

In all States, statutes can be changed by the legislature, while case law, which is made by the courts, can be reversed by the courts. In Oklahoma, many people feel that the State water statutes may be changed in the near future, and that Oklahoma will be in a state of flux for some time to come.

Oklahoma is a good example of cooperation between State and Federal agencies in many areas. The U.S. Fish and Wildlife Service is a member of the Oklahoma Comprehensive Water Plan Planning Committee. The Oklahoma Wildlife Federation also functions as an excellent liaison between local interests and the U.S. Fish and Wildlife Service. Some of this cooperation is statutorily required: For example, some of the development of the Oklahoma Water Plan was Federally funded through work by the Corps of Engineers and the Bureau of Reclamation. Because Federal funds were thus expended, the Fish and Wildlife Coordination Act (16 U.S.C., et seq.) required U.S. Fish and Wildlife Service involvement. Voluntary cooperation, however, has led to good joint efforts.

Oklahoma is a State with many reservoirs. Most of the State's water is stored in the spring. In the dry summer and winter periods, streamflows are largely the result of releases from stored water. The fact that many streams are maintained by releases from reservoirs raises problems for instream uses in that many people are believed to be reluctant to protect "artificial" stream flows even to preserve the fish and wildlife and riparian habitat which are dependent on flow. A recent public poll offers evidence counter to this view. This study reported that more than 50% of the respondents would favor some sort of law to "protect minimum stream flows" (The Wildlife Society and American Fisheries Society 1982a: 5, 7). The implications of such a poll for policy-making are difficult to judge. State agencies responsible for administering Oklahoma's natural resource programs regularly deal with these issues.

OKLAHOMA WATER RESOURCES BOARD

The Oklahoma Water Resources Board is composed of nine members, one member appointed from each of the six congressional districts and three at large (82 Okla. Stat. Ann. § 1085.1, Supp. 1972). This Board has general authority to approve water rights permits, develop Statewide and local plans, to ensure the best use of water in the State, to establish rules and regulations, and to take similar actions. Although the Board does not have explicit statutory authority to purchase or appropriate land or water for its own use,

it does have authority to sell or dispose of real property held by the Board when it is no longer needed, which suggests that the Board itself has authority to acquire lands and water. A letter explaining the Water Resources Board position on the utility of this document is reprinted on page 32.

OKLAHOMA CONSERVATION DISTRICTS

Conservation districts are created by the Conservation District Act (82 Okla. Stat. Ann. § 1501-101, et seq.). These districts serve as primary units responsible for conservation of the renewable natural resources of the State. They were particularly created for the purpose of cooperating with the U.S. Secretary of Agriculture under the Watershed Protection and Flood Prevention Act. Each conservation district prepares and is to keep current a long-range program for conservation of renewable natural resources in the district.

OKLAHOMA WILDLIFE CONSERVATION COMMISSION

The Wildlife Conservation Commission is an advisory, administrative, and policy-making board, whose powers include acquisition by purchase, lease, condemnation, or gift, of waters and real property incident to its functions (29 Okla. Stat. Ann. § 3-101, et seq.). These functions include regulating the Department of Wildlife Conservation, supervising wildlife refuges and stations, public hunting and fishing areas, and similar activities. The Commissioners are appointed by the Governor for eight years.

SOURCES

The Wildlife Society (Oklahoma Chapter) and American Fisheries Society (Oklahoma Chapter). 1982a. Stream and Streamside (Riparian) Fish and Wildlife Habitats: A report on the results of a public opinion survey in Oklahoma (Synopsis). Broken Arrow, OK: Oklahoma Chapter of the Wildlife Society. July.

. 1982b. Stream and Streamside (Riparian) Fish and Wildlife Habitats: A report on the results of a public opinion survey in Oklahoma. Broken Arrow, OK: Oklahoma Chapter of the Wildlife Society. July.

WATER RIGHTS

APPROPRIATIVE RIGHTS

Opportunity

Water rights can be acquired for uses downstream of a reach or stream of concern. The permitting process used by the Oklahoma Water Resources Board incorporates protection for downstream uses which can be used to protect flows upstream of a user (82 Okla. Stat. Ann. § 105.12).

Background

In Oklahoma, appropriative rights may be obtained through the Water Resources Board. Riparian rights for domestic use may also be acquired by purchasing riparian land; and riparian rights may be acquired for nondomestic purposes by the purchase of riparian land with a pre-1963 water use (82 Okla. Stat. Ann. § 105.12).

The Board may approve an application for an appropriation right under several conditions. For example, if there is unappropriated water available, if the applicant has a present or future need for the water, and if the proposed use would not interfere with existing rights [82 Okla. Stat. Ann. § 105.12]. Furthermore, the Board may approve transbasin diversions, but it must reserve sufficient water to adequately supply the beneficial needs of all users within the originating basin. The Board is to review the needs of the basin of origin every five years.

For an individual or agency, the first step in acquiring a water right is to make application to the Water Resources Board. Parties permitted to apply for water rights in Oklahoma include individuals, corporations, and State or Federal governmental agencies (82 Okla. Stat. Ann. § 105.9, et seq.).

Any agency which is authorized under its own statutes to hold title to real property can apply for a permit under the Oklahoma statute. Because Oklahoma uses a priority system, prompt application for water rights on unappropriated water can make the water usage on a stream more definite and certain, to the eventual benefit of all the users.

When an application is received, the Water Resources Board notifies affected parties and holds a hearing on the matter. After holding a hearing

and evaluating an application to appropriate stream water the State Water Resources Board must make the following determinations:

After the hearing on the application the Board shall determine from the evidence presented whether:

1. There is unappropriated water available in the amount applied for;
2. The applicant has a present or future need for the water and the use to which the applicant intends to put the water is a beneficial use; and
3. The proposed use does not interfere with domestic or existing appropriative uses.

In granting of water rights for the transportation of water for use outside the stream system wherein water originates, applicants within such stream system shall have a right to all of the water required to adequately supply the beneficial needs of the water users therein. The Board shall review the needs within such area of origin every five (5) years. If so determined, the Board shall approve the application by issuing a permit to appropriate water. The permit shall state the time within which the water shall be applied to beneficial use. In the absence of appeal as provided by this act, the decision of the Board shall be final (82 Okla. Stat. Ann. § 105.12).

Because conservation interests will often want, as a minimum, to preserve the present stream regime, they may want appropriations to be scrutinized closely. Opponents to a new appropriation should state their objections in the statutory terms. For example: There is no unappropriated water available when the appropriator wants it; or, the proposed use is not "beneficial"; or, most importantly, the proposed use will interfere with present domestic or appropriative uses. If the instream flow supporter can enlist the aid of affected cities, large irrigators, or other "deep pockets" who will be affected by the proposed appropriation, the stream regime may be protected at little cost.

Finally, unused water reverts to the public, and the right to use such water may be cancelled administratively by the Board after a hearing (82 Okla. Stat. Ann. § 105.21). Water may also be surrendered to the Board. The owner of works for water carriage having surplus water may also be required to deliver that water at reasonable rates to parties entitled to its use; these "parties" could include downstream appropriators.

Example

A 1977 Supreme Court of Oklahoma case, Oklahoma Water Resources Board v. City of Lawton (580 P.2d 510), demonstrates the effectiveness of a protest to a new appropriation by the holder of appropriative rights. A potential

appropriator sought to use 400 acre feet of water entering Jimmie Creek, which supplied Lake Lawtonka, the major source of water supply for the City of Lawton. Local citizens protested the granting of the permit by the Water Resources Board because use of the water by the permittee would deprive them of enough water to irrigate their land and water their livestock. Although the Water Board issued its temporary permit after a hearing, and reaffirmed the permit after a rehearing, appeal to the District Court resulted in setting aside of the order issued by the Water Resources Board. The Supreme Court affirmed the District Court, with the result that the proposed appropriation was denied and the water was left in Jimmie Creek to flow into Lake Lawtonka. Although a small minority of such cases reaches the Oklahoma Supreme Court, the same principle applies in all contested cases heard before the Oklahoma Water Resources Board.

Evaluation

In all States employing the prior appropriation doctrine, objections to further appropriations, changes in points of use, and changes in types of use are effective means of protecting both the present regime of a stream and of preventing over appropriation. Although it can fairly be said that most of Oklahoma's water is presently overappropriated, and that Oklahoma is largely a reservoir State, there are streams worth protecting in the State. Although the free market system operates to protect some of these streams, intervention by an agency or individual with conservation interests and some type of standing before the Water Resources Board can assist in protecting instream flows.

Cost of this intervention can be substantial if the protest involves actual litigation. Litigation is, however, rare. Often an accommodation can be worked out which will meet the needs of all parties. It is necessary, of course, to know of a proposed appropriation in order to protest it. Conservation interests will also need the cooperation of the Board to receive effective notice of appropriations on streams to which the conservation interest does not have a downstream right.

CONDITIONS ON WATER PERMITS

Opportunity

Water permits granted by the Water Resources Board may be conditioned on specific terms contained within the condition or an overall basis for protecting a stream. Conservation interests that protest an application can seek these conditions to be imposed on the permit if it is granted (82 Okla. Stat. Ann. § 105.1, et seq.).

Background

As an informal matter of policy, not written or codified in the statutes or Board regulations, the Oklahoma Water Resources Board generally permits appropriation of up to 65% of the average annual streamflow. This rule has been self-imposed by the Board in order to ensure that some water is, in fact,

available to appropriators. The effect may be, in some cases, to preserve instream flows. The Board is required in a permit proceeding to determine whether unappropriated water is available. In making this determination, the Board generally relies upon the average annual streamflow, minus existing riparian and appropriative withdrawal from the stream. By issuing permits up to a maximum of 65% of the average annual flow, the Board may effectively reserve 35% of the average annual streamflow.

Water use in Oklahoma is generally granted on an annual basis, rather than a daily or cubic-feet-per-second basis. This annual measure can lead to severe problems, depending on who takes the water, when, and how fast. In 1979, the Water Resources Board began to require that the maximum diversion rate be included in the public notice and in the application for water. In this way, some control is held over daily diversions. This change in procedure in addition to protection of downstream domestic riparian owners offers some protection for instream uses.

Irrigation water is appurtenant to the land on which it is used, and may be transferred only upon application to the Board, notice, hearing, and among other statutory conditions, a finding that existing rights will not be injured by transfer (82 Okla. Stat. Ann. § 105.22). Non-irrigation users may change their kind of use, or place of diversion or use under this same procedure. In addition, any permit to appropriate water may be assigned, and the assignment may become binding if filed for record in the Board's office.

By protecting irrigation return flows to the stream, this section of the statute affords some protection to instream flow regimes, although, without an instream flow right, the protection relies upon the economic interests of downstream appropriators to protest such transfers. Water quality may also be adversely affected.

Water permits granted by the Oklahoma Water Resources Board may be regular, year-round permits; seasonal, for specific time periods; temporary, not to exceed three months; and, term permits, for a fixed term of years which does not vest the holder with any permanent right (82 Okla. Stat. Ann. § 105.1). Recently an additional type of permit labeled a "provisional temporary permit" has been authorized (35 O.S.L. 1981 amends §§ 105.1, 105.13, 105.15 of OKla. Stat. Ann. Title 82). A seasonal, temporary, or term permit for the use of water is of far less interest in most instream flow situations than is a regular permit, although seasonal permits may be very useful in augmenting streams during dry seasons.

Beneficial use is the basis, measure, and limit of the right to the use of water, but the statute does not include a definition of "beneficial use" (82 Okla. Stat. Ann. § 105.2). The statute also exempts domestic use. Anyone may take domestic water from a stream to which he is riparian or take water from wells on his property, and may store two years' supply of water for domestic use. The cumulative effect of such exemptions can be substantial. Apart from an effort to permit direct appropriation of instream flows, conservation interests may wish to seek a legislative declaration that instream use qualifies as a beneficial use.

The Board has issued permits that include conditions. In some cases, a permit will allow withdrawal only when the streamflow is at a certain level at a gaging facility. If the water is below this level, the appropriator cannot use it. In cases in which a downstream verifiable domestic use exists, this method can protect streamflows between the two appropriators. This method has also been used in scenic situations. For example, this approach has protected Turner Falls resort and recreation area in southern Oklahoma. In that reach of the stream, conditions are imposed upon appropriators so that if the flow goes below a certain level which would affect the falls, they must cease appropriating. This also protects instream uses above the falls.

Example

In April, 1980, the Oklahoma Water Resources Board held a hearing on the application of the City of Guthrie for 14.38 acre feet of water, which the city proposed to pump from five wells into Liberty Lake. Fourteen protestors objected to Guthrie's plan. One key question was whether Guthrie needed all of the water it had applied to receive. Because the Board decided that Guthrie had not proven that it had an intent or basis for putting the full amount to actual beneficial use, the amount permitted to be appropriated was reduced from 14.38 acre feet to 5.61 acre feet annually. Another question raised by the objectors was whether pumping the water into Liberty Lake would result in "waste" as a result of evaporation losses of water in the lake. To answer this question, the Board conducted an operations study of Liberty Lake, taking into account conjunctive use of groundwater and stream water by using a computer model of groundwater pumpage, rainfall, runoff, storage of the lake, elevation of the water level, and evaporation. The computer model indicated that in certain operating conditions, excessive evaporation and overflow spill would not occur. As a result, the Board determined that no pumping of groundwater would be allowed when the elevation of Liberty Lake was at or about 988 feet. This restriction was included as a condition of the order of the Board, as well as a condition that Guthrie must install flow meters on each water well, make an annual water use report, and monitor the static water level of the wells.

Such conditions are not unusual and can result either from negotiation with the applicant or from work actually done by the Board, as in this case. Often the conditions are phrased in these terms: No direct diversions shall be allowed from stream "X" or any of its tributaries except when the flow at a specific U.S.G.S. gage exceeds "Y" cfs.

Evaluation

The costs of imposing conditions on permits granted to appropriators are much the same as occur in simply opposing appropriations without conditions. The costs include personnel time to prepare for and attend hearings, negotiating sessions with the applicant and the Board, drafting and presenting proposed conditions, and similar expenditures of time and funds that occur in most administrative law situations. In cases in which private water users downstream can be identified who can bear the costs, these measures can be undertaken by the private appropriators at no cost to conservation interests, except identifying, notifying, and generally assisting private interests.

RIPARIAN RIGHTS

Opportunity

Conservation agencies which own riparian land may protect their own uses of the water and possibly help hold water in the stream upstream of their place of use (60 Okla. Stat. Ann. § 60).

Background

In Oklahoma, a riparian landowner has a qualified property right to have the water of the stream which touches his land flow naturally to his land. His use of the stream water must be reasonable, beneficial, and practicable, and he owes a duty to his neighbors to take only a reasonable quantity of water. Several specific uses have been recognized by Oklahoma courts as beneficial riparian uses of water. These include propagating fish, operating fish hatcheries, and fishing resorts. Current Oklahoma law seems to restrict riparian beneficial uses of water to a rather narrow definition of domestic water rights [82 O.S. Supp. 1972 § 105.1(B), and Lay 1981]. On the other hand, a city's riparian landownership does not entitle it to remove water to distribute to its inhabitants in Oklahoma. No permitting by the Oklahoma Water Resources Board is required for domestic use of ground or stream water by a riparian landowner. In addition, riparian owners receive newspaper notice of applications for appropriators on their stream, if they are in the same or adjoining counties. Occasionally, riparian owners do come in and object to appropriation applications made before the Water Resources Board. If agencies, conservation organizations, or individuals interested in stream flows own riparian land and are in a position to protest that their reasonable riparian uses have been impaired, or will be impaired, by appropriation of upstream water, they may do so. However, domestic water rights are generally only possessed by "natural" individuals and not agencies (Lay 1981).

Evaluation

The costs involved in protecting instream uses through protecting an application made for appropriation of upstream water, are essentially the same as those involved in protecting the stream through ownership of a permit to appropriate water downstream. It may be that some conservation agencies own riparian land for which no water permits have been granted. This does not prevent these riparian owners from entering water application proceedings, where they may very effectively ensure a streamflow to their land.

OTHER WATER BOARD APPROACHES

Opportunity

Among the many other opportunities for protecting instream flows in Oklahoma are three approaches that may be used as adjuncts to other overall approaches.

1. Condemnation can be used to acquire property for storage and conveyance of water for beneficial uses (82 Okla. Stat. Ann. § 105.3).
2. Natural water courses may be used as a means of transportation for water to its place of proposed use (82 Okla. Stat. Ann. § 105.4).
3. The Oklahoma Water Resources Board is empowered to bring suit to determine all rights to a stream system, and can thus initiate a suit to determine Federal reserved rights to water in Oklahoma (82 Okla. Stat. Ann. § 105.6).

Background

Eminent Domain. Eminent domain powers are given to persons, corporations, and associations for acquiring rights of way for storage or conveyance of water for beneficial use. While the statute does not by its terms extend this right to governmental agencies, most governmental agencies will have the power of eminent domain. This right of condemnation can be very useful to augment critically low streamflows when water is moved, for example, from a groundwater source to a low flowing stream.

Conveyance. The statutes permit any party entitled to use water to turn it into a natural watercourse and reclaim it downstream (82 Okla. Stat. Ann. § 105.4). In such a situation, allowance for loss is made by the Water Resources Board. Appropriated upstream water may be sent downstream to the place of use, thereby augmenting the streamflow. The City of Guthrie, Oklahoma, has used this method of water transportation between Liberty Lake and the intake point of the City water system (see "Conditions on Permits", above). Although the stretches of stream protected may seem short, in a water-short State, any stream protection is valuable.

Adjudication. States in the West are beginning to seek general adjudication of all water rights in their State, in order to bring clarity and orderliness to the administration of water rights. In Oklahoma, the Water Resources Board is empowered to institute lawsuits for determination of all rights to the use of a stream system (82 Okla. Stat. Ann. § 105.6).

Evaluation

The costs of these opportunities to protect instream uses vary. The use of eminent domain carries with it the cost of the land under the condemnation statutes, which costs will be borne by whatever private person or governmental agency needs the right of way for conveyance of water. Turning water into a natural streambed for transportation carries with it very few costs and large benefits.

GROUNDWATER

Opportunity

Groundwater can be a potential source of water for streamflows in dry seasons. On the other hand, groundwater is often closely tied through the hydrological cycle to surface water, and withdrawal of groundwater can dry up a stream. In such a situation, a protest before the Oklahoma Water Resources Board for groundwater permits might protect instream uses (82 Okla. Stat. Ann. § 1020.1, et seq.).

Background

Groundwater is generally available in Oklahoma from twelve major groundwater basins. Groundwater furnishes 61% of the total water used in Oklahoma, and over 80% of the State's irrigation.

Groundwater in Oklahoma is subject to a mixed kind of ownership. The landowner has statutory ownership of groundwater, but its use is subject to the groundwater law incorporated in Title 82, which requires permits for use of groundwater, with conditions imposed on that use in the permits.

The Oklahoma Groundwater Law defines groundwater to include all water under the surface of the earth regardless of the geological structure, and water moving outside the cut bank of any definite stream (82 Okla. Stat. Ann. § 1020.1, et seq.). It also defines "person" (as in a person appropriating the water) to mean individuals, corporations, Federal and State agencies, the State, and political subdivisions such as municipalities. The Oklahoma Water Resources Board has jurisdiction over groundwater use in the State. One large exception is domestic use by riparian landowners, who may take groundwater from land they own without permits, and are subject only to sanctions against waste.

State policy in regard to groundwater is to allocate it based on hydrologic surveys of basins in order to restrict production based on the acreage overlying the basin. These hydrologic surveys are to be made by the Oklahoma Water Resources Board and updated each ten years. The annual yield for each basin is to be based upon a minimum basin life of twenty years, beginning July, 1973. After each survey, the Board is to hold hearings; persons wishing to use groundwater are to apply to the Board and are entitled to a hearing. An applicant is entitled to his proportionate part of the maximum annual yield of the basin, based upon his ownership of land. Completion of the hydrological survey does not have to occur before a provisional permit may be granted but is required for a "regular" permit (Lay 1981). Types of permits include regular permit, temporary permit, provisional temporary permit (82 O.S. Supp. 1977, § 1020.10), and a special permit which is for water in excess of that allowed under a regular or temporary permit for no longer than six months (Lay 1981).

Holders of groundwater permits must report to the Board annually about their use of water (82 Okla. Stat. Ann. § 1020.12). Additional statutory

provisions permit surrender of groundwater permits and prevent waste. Waste includes "transporting fresh ground water from a well to the place of use in such manner that there is an excessive loss in transit" (82 Okla. Stat. Ann. § 1020.15.4).

Defining the difference between groundwater and stream water can be of critical importance (60 Okla. Stat. Ann. § 60). In Oklahoma, if water, originating underground, coming to the surface in the form of a spring, runs across the surface of the earth in a non-definite course before constituting a definite stream, such water is not capable of appropriation as stream water. It must be appropriated as groundwater. On the other hand, if natural spring water forms a definite stream it is from its inception liable to be appropriated as stream water.

A recent clear explanation and summary of Oklahoma law distinguishing between groundwater and stream water may be found in Oklahoma Water Resources Board v. City of Lawton [580 P.2d 510 (1978)]. The court explained that whenever water from a natural spring (which is acknowledged to arise from groundwater) forms a definite stream, the water in the stream and the spring itself, from its inception, must be classified as stream water and appropriated as such. The fact that the stream water runs in a non-definite course before forming a definite stream does not affect its classification, if the water is in fact a source of a definite stream, then it must be appropriated as stream water.

Example

In the order of the Oklahoma Water Resources Board submitted in application number 80-551, the Board granted permission to the City of Guthrie to extract water from a groundwater basin for municipal water supply purposes and to put that water into Liberty Lake for municipal use. This order, which effectively protects Liberty Lake from excessive drawdown whenever groundwater supplies exist, was opposed by a number of protestants, but was granted despite their allegations of damage. The Board was moved to conduct a study using a computer model of the lake and groundwater which showed the objectors were in error.

Evaluation

The costs of protesting applications for groundwater withdrawal before the Water Resources Board and the costs of supporting an application for groundwater withdrawal to augment stream flows in critically dry areas, are much the same as those costs incurred in seeking an appropriation from streams or protesting such an appropriation, discussed above. In situations in which someone else can bear the burden, such as a city, a large corporation, an irrigation district, or a group of private individuals, the cost is eventually spread thinly and borne fairly easily. When a single agency must bear the personnel and time costs, the cases for objection should be chosen carefully, because it is possible that they will go to actual litigation, in which event, out-of-pocket costs increase substantially.

SOURCES

Statutes and cases summarized in the text are not listed here.

Hutchins, W. A. 1977. Water Rights Laws in the Nineteen Western States. Vols. I-III. U.S. Department of Agriculture.

Lay, R. T. 1980. General Counsel, Oklahoma Water Resources Board. Personal communication. 13 July.

_____. 1980. Instream Flow Opportunities Within Existing Legal Constraints (Under Oklahoma Law). Presented to the Arkansas-White-Red Basins Inter-Agency Committee meeting, Santa Fe, New Mexico. September.

_____. 1981. Letter from General Council, Oklahoma Water Resources Board. 22 September.

Oklahoma Water Resources Board. 1976. Oklahoma's Water Atlas.

_____. 1976. Oklahoma's Water Quality Standards. 1979 Water Quality Standards Supplement.

_____. 1979. Rules, Regulations and Modes of Procedure. Revision.

Oklahoma Water Resources Board v. City of Lawton. 1978. 580 P.2d 510.

Oklahoma Water Resources Board v. Foss Reservoir Master Conservancy District. 572 P.2d 162.

Trelease, F. J. 1974. Water Law: Resource Use and Environmental Protection, 2nd Ed. West Publishing Co.

U.S. Water Resources Council. 1980. State of the States: Water Resources Planning and Management. April.

WATER MANAGEMENT

State governmental entities other than the Water Resources Board affect water management in Oklahoma. These entities range from cities through permanent wide-ranging districts to ephemeral organizations with limited powers. Persons interested in streams in a particular area should familiarize themselves with the districts and governmental authorities in that area. Many of these authorities will have a direct impact on streams, and can substantially affect the success of efforts to conserve fish and wildlife.

DISTRICTS

Opportunity

The larger districts develop plans for management of water in their areas; when these plans affect streams, they can recognize instream needs and values (82 Okla. Stat. Ann. § 1501-101, et seq.).

Background

Conservation Districts. Conservation districts are created by the Conservation District Act (82 Okla. Stat. Ann. § 1501-101, et seq.). These districts serve as primary units responsible for conservation of the renewable natural resources of the State. They were particularly created for the purpose of cooperating with the U.S. Secretary of Agriculture under the Watershed Protection and Flood Prevention Act. Each conservation district prepares and is to keep current a long-range program for conservation of renewable natural resources in the district.

There are six master conservancy districts which act as water brokers in the State (82 Okla. Stat. Ann. § 501, et seq.). On Federal reservoirs, for example, a master district will apply for a right for all of the water which it then will sell to other users. These conservancy districts are intended to supervise water use in the district in an effort to localize management of water. The statutory purposes for which conservancy districts may act include preventing floods, regulating stream channels, reclaiming wetlands, providing for irrigation, regulating the flow of streams, diverting water courses, and generally developing water. Master conservancy districts may include more than one conservancy irrigation district. Conservation districts have the power of eminent domain, taxation and assessment, and the power to issue bonds.

The districts work generally like special improvement districts of any kind, appraising and assessing property, in order to pay for the particular plan or project which will benefit that property, and issuing bonds to fund the project. The boards of directors of these conservancy districts are responsible for planning the improvements for which their districts were created, and publishing these plans.

Whenever a conservancy district is considering a new plan, it may include instream needs and values and it may incorporate these values in district planning or construction. Section 568 outlines the general powers of conservancy districts in carrying out their plans. These powers are considerable, and include changing the course of any natural stream in or out of the district; filling up water courses; diverting the flow of water; and owning, encumbering, controlling, or acquiring real and personal property, including easements, riparian rights, and other real estate. Section 570 provides that the right of these districts to eminent domain prevails over all other eminent domain powers in the State below the State level, but the powers of conservancy districts fall under the general provisions of the State water law.

Other Districts. Other State-organized districts include rural water, sewer, gas, and solid waste management districts; over 200 rural water districts exist in Oklahoma. These districts are empowered to file applications for appropriation of water, and may otherwise affect water as it is necessary for their district (82 Okla. Stat. Ann. § 1324.2, et seq.). Administrative changes in the management of water within a given water district may protect streamflows.

Water Resources Fund. A water resources fund may be used for reservoir sites or areas in the State, construction or enlargement of dams and their use (82 Okla. Stat. Ann. § 1085.30, et seq.). Investment certificates may be sold to provide money for the fund, and the Treasurer of the State of Oklahoma is authorized to purchase \$1,500,000 in investment certificates for each storage facility. Money from this fund may be loaned to municipalities, water districts, or other entities for reservoir projects.

Mitigation. In Oklahoma, as elsewhere, past mitigation of net fish and wildlife habitat value losses to water development projects usually has entailed the operation of reservoir flood pool lands as wildlife management areas. Typically, the Oklahoma Department of Wildlife Conservation has been granted license for management of lands within the 100-year flood pool to partially offset net terrestrial habitat losses resulting from reservoir inundation. In most cases, however, mitigation of stream aquatic habitat losses to such projects has been given a very low priority by construction agencies. Provision of adequate levels of mitigation of these habitat losses usually involves the establishment of a water release regime below the reservoir for downstream instream flow maintenance or improvement. Such water release regime plans usually are formulated and incorporated in the reports of the U.S. Fish and Wildlife Service which are provided for under authority of Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C., et seq.). However, these plans seldom have been adopted by Federal construction agencies in their recommended plans of development and

operation. Justifications given by the construction agencies for non-adoption usually are based on the premise that the State of Oklahoma does not recognize instream flows, per se, as "beneficial uses" of water; therefore, a water right cannot be gained for their provision. At present, downstream release regimes from Oklahoma's Federal reservoirs, other than for authorized purposes of flood control, hydropower generation and navigation storage, are based on existing or vested downstream appropriative and riparian water rights.

Grand River Dam Authority. Another important district in Oklahoma is the Grand River Dam Authority. This district includes portions of 21 counties, and was organized to control and distribute the waters of the Grand (Neosho) River and all its tributaries (82 Okla. Stat. Ann. § 861, et seq.). This is not a water conservancy district, but a separate water permitting authority with its own rules and regulations. Although the overall purpose of this Act is to regulate the production and sale of electric power produced by the dam, one of the mandates of the District is to forest and reforest the watershed area of the Grand River and to prevent erosion and floods. Administrators of the District may be amenable to arguments that instream needs and values should be considered in administering the contracts entered into under the statute. The District is forbidden to prevent free public use of its lands and lakes for recreation and fishing (82 Okla. Stat. Ann. § 875).

Example

The McGee Creek Project offers an example of the way in which local districts, sportsmen's organizations, and other organizations below the State level can benefit instream flows. The McGee Creek Project has as its purpose to supply municipal water to Oklahoma City through a pipeline from McGee Reservoir to Atoka Reservoir, from which a pipeline extends to Oklahoma City. The reservoir originally was a Corps of Engineers project which was studied and shelved as uneconomical in the early 1960's. A great deal of nearby land was later bought up by a Texas investor; the plan of development for the land included bulldozing off all the timber as a first step. This action brought a good deal of local attention to the project because the timber provided some excellent deer habitat and hunting. The Southern Oklahoma Development Association became involved in efforts to change the development project to a local water project, and coordinated the many interests involved. The original objectives were to satisfy local demand for water and to preserve habitat for hunting. A local group, the Scenic Rivers Association of Oklahoma, suggested that a downstream easement be added to the project for fisherman access. These interests approached the Bureau of Reclamation (BuRec) which was the lead planning agency in developing this water project. The Texas developmental interests were approached by BuRec and agreed not to clear the land while the project was being planned. In exchange, these interests received a semidevelopment or commercial recreation area near the water body.

The congressional, authorizing legislation which resulted from the extensive work by the local organizations is very specialized and authorizes the wildlife management area, which borders an existing Oklahoma Department of Wildlife Conservation management area and a wilderness area. There is also a 3.5 mile easement for fisherman access downstream along McGee and Muddy Boggy

Creeks. Releases from the reservoir of ten to twenty cubic feet per second are also specified to maintain this management area.

Evaluation

The happy outcome of the McGee Creek development is due to a fortunate series of circumstances: a threat to the local environment by outside interests; an early decision by State organizations and local interests to preserve the area; and careful planning by all the State and Federal agencies involved. All of the agencies involved encountered some costs, but no costs were raised which were outside of normal budget. This cooperative approach, spearheaded by organizations below the State level, is politically acceptable, inexpensive, and can be very effective.

CITIES

Opportunity

Cities can substantially protect instream flows through judicious use of their master plan, condemnation, creation of water districts, and other statutory powers (11 Okla. Stat. Ann. § 47-101, et seq.).

Background

Master Plans. Land use planning functions by cities with a population of over 200,000 are exercised through the City Planning Commission, which adopts a master plan for physical development of the municipality, including land outside the municipal boundaries which bears a relation to the planning of the municipality (11 Okla. Stat. Ann. § 47-101, et seq.). Once the plan is completed, any construction in the area within the plan must be approved by the Commission unless overruled by the City Council. Whenever construction may affect the course or streamflow of waterways, a city master plan could be invoked to halt or alter the course of the construction. While these master plans are being developed, stream needs can also be presented to the Planning Commissions so that instream flow values can be included in the plans.

Condemnation. Under Oklahoma riparian doctrine, a city's riparian status does not entitle it to remove water for distribution for domestic or municipal purposes [Oklahoma Water Resources Board v. Central Oklahoma Master Conservancy District, 464 P.2d 748 (Okla. 1968); 464 P.2d 755 (Okla. 1969)]. On the other hand, under 11 Okla. Stat. Ann. § 37-103, cities may dam non-navigable streams and may condemn, appropriate, and divert the water, as well as condemning land outside the municipal limits for construction of water works. The procedure for appropriation of land or water is to follow the procedure for condemnation of land for railway purposes. Condemnation by a municipality of water rights upstream, in which the water is transported by the natural stream to the reservoir or treatment plant, can provide an automatic instream flow. When the possibility of such condemnation is raised, cities may look at the substantial advantages of instream uses such as public recreation.

Water Districts. If a city gets its water from a stream or reservoir outside its city limits, it may designate by ordinance a water district embracing lands which directly or indirectly put water into the streams or reservoirs (11 Okla. Stat. Ann. § 37-110, et seq.). The governing body of this water district then may enforce rules and regulations made by the State Commissioner of Health, County Superintendent of Health, or municipal Public Health Officer, in order to protect the water supply. These ordinances, rules, and regulations, are to be served on every person owning property within the water district.

Other Powers. Local rules promulgated by the county Superintendent or city Public Health Officer to protect water supplies can be a source of protection for instream flows, both as to quality and quantity, depending upon who makes the regulation. Particularly when the city is of substantial size, protection of its entire watershed may mean protection for long reaches of several streams. The great advantage of this strategy is that it is free of cost to State or Federal agencies.

A city can provide for future water and waterworks requirements "in advance of its immediate needs" (11 Okla. Stat. Ann. § 37-117). In exercising the power of eminent domain for such future needs, the municipality may also sell water to persons or municipalities outside its own limits. If any municipality has sufficient funds to condemn water now for use in the future, it will increase upstream flow protection as well as protecting the city residents from future shortfalls. Such water, remaining in the stream, will also be less likely to be appropriated by downstream users, because it may disappear at any moment when the municipality decides to use it. This method of providing for instream flows can be a substantial one if a well-funded municipality is on the stream to be protected. Municipalities may also use water outside their limits for parks and other public purposes.

Municipalities can even go outside the State of Oklahoma to obtain water (11 Okla. Stat. Ann. § 37-118). This statute, combined with others, may permit interstate protection of streamflows above municipalities.

Every city, town, and county in Oklahoma is authorized to have a port authority, to construct and operate port, industrial, and transportation facilities on waterways within its jurisdiction (82 Okla. Stat. Ann. § 1101, et seq.). Each port authority has the power to alter, reconstruct, extend, or improve channels and watercourses as necessary, and to acquire and operate real property for its authorized purposes. Port authorities also have the right of eminent domain and the authority to borrow money and issue bonds. Each port authority is directed to prepare a plan for future development and to publish that plan. If port authorities do exist on streams or waterways of interest, they may be situated, both physically and financially, to assist in maintaining instream flows. It should be pointed out to the Board of Directors of any concerned port authority that maintenance of instream flows is essential for operation of most ports. Because the port authorities have power to condemn and to own real property, they may wish to invest in upstream water rights for port use, which would have the effect of holding flows in the stream.

Example

The power of a city to protect land and water in its entire watershed was confirmed in the Oklahoma Supreme Court case, Oklahoma Water Resources Board v. City of Lawton [580 P.2d 510 (1978)]. In that case, a developer attempted to appropriate 400 acre feet of groundwater. The City of Lawton successfully argued:

The water which [the developer] sought to appropriate comes to the surface of the earth in the form of a spring and enters a channel known as Jimmie Creek at a rate of approximately one million gallons of water per day, and that the City of Lawton is the owner of Lake Lawtonka, which is the major source of water supply for the City of Lawton, and that the water which Mr. Cabelka wishes to withdraw is within the watershed of Lake Lawtonka and would normally drain into that Lake.

The City argued that if a permit to appropriate the water were granted, the withdrawal of the water would substantially affect the water supply of Lake Lawtonka and be an extreme detriment to the City of Lawton (580 P.2d 511).

The court found that the water must be appropriated as stream water, within the watershed of the city, rather than as groundwater. This holding can, in some situations, protect against overuse of water in a city's watershed.

Evaluation

The ultimate costs of a city's protecting its water rights, watershed, or recreation interests in a stream will be borne by the citizens of that city. The costs may be reduced because a potential appropriator, recognizing a substantial opponent, may withdraw early in the conflict rather than press his claim against a city. When a city establishes a water district or other structure of municipal government for the purpose of dealing with its water rights, it is doing something that the exigencies of the water situation require it to do. These costs cannot be attributed to instream uses alone.

COMPACTS

Opportunity

Interstate compacts may be of assistance in protecting streams in Oklahoma and neighboring States. Several compacts presently affect Oklahoma streams (82 Okla. Stat. Ann. §§ 521.1, 1421, 1431).

Background

Oklahoma is party to several compacts. Under the Canadian River Compact, Oklahoma has certain rights to receive fixed amounts of water from New Mexico

and Texas (82 Okla. Stat. Ann. § 526.1). The Arkansas River Basin Compact between Arkansas and Oklahoma divides up development rights on this general basin between Arkansas and Oklahoma (82 Okla. Stat. Ann. § 1421). The Red River Compact between Arkansas, Louisiana, Oklahoma, and Texas divides the Red River into five subdivisions and apportions usage within those subdivisions according to schedules (82 Okla. Stat. Ann. Section 1431, et seq.). In addition, it establishes a commission to administer the Compact.

Example

The Illinois River runs through two counties in Arkansas and then into Oklahoma, where it has been designated a State scenic river. The upper thirty miles of the river in Arkansas, however, have not been so designated. Arkansas has agreed not to contaminate the waters of this river under its compact with Oklahoma. In 1979-80, two Arkansas counties, Washington and Benton Counties, proposed a joint sewage disposal plant which would have affected the river. After negotiations under the compact the sewage disposal plant plan was dropped.

Evaluation

Because the work of drafting and enacting compacts has already been accomplished, enforcement of compact violations is often simple and direct. Most State Attorneys General prefer to negotiate or avoid an anticipated violation of the compact rather than become engaged in interstate litigation. The cost of this approach to protecting instream flows is one which will arise in protection of any stream: The stream must be monitored, and the monitoring agency should have in mind the terms of the compacts that affect the stream.

STATE CONTROLS

Opportunity

A number of State statutes set up procedures through which instream needs and values can be protected indirectly. Pollution control under Federal water quality control laws, restrictions on land leases made by the Wildlife Conservation Commission, and the Scenic Rivers Commission are examples (82 Okla. Stat. Ann. § 931, et seq.).

Background

Pollution Control. The Department of Pollution Control, which has overall coordination authority for pollution control and environmental quality, is directed by the Pollution Control Coordinating Board, whose members include, among others, the Director of the Department of Wildlife Conservation, the Director of the Water Resources Board, and two appointed members "experienced in environmental activities" (82 Okla. Stat. Ann. § 931, et seq.). These Board members may promote instream values. All Federal funds received under the Federal Water Pollution Control Act (Clean Water Act) (FWPCA) except for construction grants, must be disbursed by the Pollution Control Coordinating

Board, and may not be received directly by other State boards (Op. Atty. Gen. No. 77-301, 28 April 1978). This Board is, therefore, not only the general supervisory board, but also the applicant and recipient for Federal funds, which should give it considerable influence to promote environmental values.

Pollution is defined very broadly: "The presence in the environment of any substances or contaminants, including noise, in quantities which are or may be potentially harmful or injurious to human health, welfare, or aesthetic sensibilities, or to property, animals or plant life" [Section 932.1(d)]. Although this definition is expansive, it does not include the condition of inadequate water supplies. The definition of waters under the statute is also very broad, but excludes waters owned entirely by one person which do not discharge on other property or water. [See also: 82 O.S. Supp. 1972, § 926.1(1) and (6)].

Although the Pollution Control Coordinating Board is authorized to receive and disburse Federal funds under the FWPCA, it does not qualify as the single State agency charged with the responsibility of enforcement of State laws for the abatement of water pollution (Op. Atty. Gen. No. 72-183, 23 June 1972).

The Board, in other words, is not a law enforcement body, but a supervisory and policy agency. Under Section 934, the Board is to coordinate and eliminate duplication of effort by State agencies with statutory authority to control environmental pollution, to compel action by the appropriate State agency, and to act on its own to prevent pollution if the appropriate agency has failed or neglected to do so. The authority of the Pollution Control Coordinating Board is, therefore, in addition to the authority of the other agencies represented by the Board.

Wildlife Conservation Commission. The Wildlife Conservation Commission is an advisory, administrative, and policy-making board, whose powers include acquisition by purchase, lease, condemnation, or gift, of waters and real property incident to its functions (29 Okla. Stat. Ann. § 3-101, et seq.). These functions include regulating the Department of Wildlife Conservation, supervising wildlife refuges and stations, public hunting and fishing areas, and similar activities. The Commissioners are appointed by the Governor for eight years.

The Commission oversees the Wildlife Conservation Fund, which contains all monies received by the Department of Wildlife Conservation, including fines and forfeitures for violating wildlife conservation laws (29 Okla. Stat. Ann. § 3-301). Monies are available under this fund for possible use by the Commission for acquisition of water for fish propagation or other appropriate purposes.

Lands owned by the State of Oklahoma may be leased upon terms and conditions prescribed by the Wildlife Conservation Commission, for agricultural purposes, oil, gas, and other mineral rights (29 Okla. Stat. Ann. § 3-304). These leases could include provisions and terms to protect instream flows whenever possible, such as by prohibiting excessive use of on-site waters and replacement of water consumed.

Scenic Rivers. The Oklahoma Scenic Rivers Act designates certain scenic river areas to be preserved as free-flowing rivers and streams (82 Okla. Stat. Ann. § 1451, et seq.). These presently include: portions of the Flint Creek from the Illinois River; portions of the Barren Fork Creek; portions of the Upper Mountain Fork River; Big Lee's Creek; and Little Lee's Creek. After an area has been designated as a scenic river area, the river is to be preserved in its free-flowing condition and not be impounded by any large dam or structure, unless specifically authorized by the State legislature. The Oklahoma Department of Tourism and Recreation and the Oklahoma Wildlife Conservation Commission may acquire and maintain park areas in scenic river areas, but may not use eminent domain for such acquisition.

Construction of dams and related projects is permitted within the scenic river area by municipalities in their immediate vicinity for their own municipal or domestic water supply (82 Okla. Stat. Ann. § 1453). This construction is permitted only where the structures will not significantly interfere with preservation of the stream. Although directed to dams, this section could be amended to include water appropriate for use for instream flows.

The statute creates a Scenic Rivers Commission and establishes procedures for designation of additional scenic areas. The present objectives of the Commission are to seek better water quality standards for these rivers. No specific provision of the statute appears to cover appropriation of water by the State for the purpose of preserving these rivers in their free-flowing condition. In addition, no access rights or land use regulations are in effect or proposed by the Commission.

OKLAHOMA COMPREHENSIVE WATER PLAN

Opportunity

Instream needs and values may be recognized and codified in the plan, which will probably become the basis for future legislation affecting instream uses (82 Okla. Stat. Ann. § 1086.1, et seq.).

Background

The Water Resources Board has the statutory authority for compiling and publishing water data in forms that are accessible for use by citizens of the State (82 Okla. Stat. Ann. § 1085.11). The Board is also to continually study the water laws of the State. Policies to guide the development of the State water plan to be developed by the Oklahoma Water Resources Board are set up in the statutes (82 Okla. Stat. Ann. § 1086.1, et seq.). The plan is to include a definition of excess and surplus waters and it is arguable that instream uses may be recognized and codified in the plan (Lay 1981). In the development of that plan, representatives of Federal and State agencies involved in parks, fish, and wildlife are invited to participate.

The complete Oklahoma Comprehensive Water Plan has been available from the Oklahoma Water Resources Board, along with a synopsis of the plan, since

January, 1980. This plan offers a review of the controversial Statewide water conveyance system planned to redistribute Oklahoma water, generally from east to west. If the Statewide water conveyance system is implemented, the Corps of Engineers would most likely be the lead agency in developing plans and cost estimates for the central and eastern parts of Oklahoma, while the BuRec would be the lead agency for planning conveyance facilities in western Oklahoma. The hope is that the proposed system would ensure adequate amounts of water for the entire State through the year 2040. Generally, surplus flows from Lake Eufaula and Kerr Reservoir and storage in Welty and Vian Creek Reservoirs would be used to convey 1.2 million acre feet annually to nine reservoirs in northcentral and northwestern Oklahoma. Surplus water from existing and authorized reservoirs in southeastern Oklahoma would be directed to central and southwestern Oklahoma in the amount of 1,310,000 acre feet annually. This proposed system would assist municipal, irrigation, and some industrial users in western Oklahoma, which has been water short for many years. It would, however, have substantial effects on streamflows in both parts of the State. The proposal is a factor which must be considered in any instream work in Oklahoma. It is a highly political question, with impacts on many areas of the Oklahoma economy.

Oklahoma is largely a reservoir State. It contains a substantial system of manmade lakes as a result of work by the Corps of Engineers, the Bureau of Reclamation (Conservation and Recreation Service), the Soil Conservation Service, the Grand River Dam Authority, and State agencies and cities. The McClellan-Kerr Arkansas River Navigation System, which extends to the Tulsa area, was the largest civil works project ever undertaken by the Corps of Engineers. It has resulted in extensive commercial development along the waterway.

The Oklahoma Water Resources Board has divided the two major river basins, the Arkansas and the Red, into 35 stream systems, which are the units used by the Board in managing the State's streams. These original 35 have been further subdivided recently into 49 stream systems. The designated stream systems are thought to be the "areas of origin" entitled to protection under Title 82 § 1086.1, which states that only surplus and excess water shall be used outside an area of origin, and that residents within the areas of origin have prior rights to use of the water for any beneficial use within that area. 82 Okla. Stat. Ann. § 105.12 states that users within a stream system are to have all of the water required to supply their beneficial needs before any water can be transported for use outside the system. These needs must be reviewed by the Water Resources Board every five years.

The proposed water transportation system from east to west in Oklahoma will need special legislation or substantial litigation before it can be carried into effect because of these two statutes providing protection for areas of origin from stream water.

Example

Two members of the Comprehensive State Water Plan Planning Committee have presented a proposed approach to provide for minimum flows in streams within

the plan. Their proposal has not yet resulted in definite action by the Committee. It includes criteria for streams to be included, and a list of qualifying streams. The proposal points out that before instream flow appropriation can be feasible in Oklahoma, the definition of "beneficial use" could be expanded to include fish and wildlife propagation in streams. Such legislation could spell out that withdrawal or diversion of water from a stream is not required either to qualify a use as beneficial or for purposes of appropriation.

SOURCES

Statutes and cases summarized in the text are not listed here.

Brabander, J., and R. Suttles. 1980. Proposed Legislation Concepts - Consideration of Stream and Riparian Natural Resource Values - Oklahoma Comprehensive State Water Plan. Presented to Oklahoma Comprehensive Water Plan Planning Committee. 20 May.

Grand River Dam Authority. 1979. Rules and Regulations Governing the Use of Shorelands and Waters of the Grand River Dam Authority on Lake O' the Cherokees and Lake Hudson.

Lay, R. T. 1981. Letter from General Council, Oklahoma Department of Water Resources. 22 September.

Oklahoma Chapter Wildlife Society. 1980. Letter to Hon. Robert S. Kerr, III, Chairman, Special Committee on Statewide Water Development Plan, including joint resolution: Proposed Means for Minimizing Native Impacts and Maximizing Benefits of Major Water Development Projects on Riparian and Stream Habitats, prepared by the American Fisheries Society and the Wildlife Society. 19 September.

Oklahoma Fishery Research Laboratory. 1965. Oklahoma Fishing Waters - Preliminary Inventory. Bulletin No. 2. June.

Oklahoma House Bill No. 1094. 1980. An Act Relating to Flood Plain Management.

Oklahoma Water Resources Board. 1976. Oklahoma's Water Atlas.

_____. 1980. Oklahoma Comprehensive Water Plan. 1 April.

_____. 1980. Synopsis of the Oklahoma Comprehensive Water Plan. January.

Oklahoma Water Resources Board v. City of Lawton. 1978. 580 P.2d 510.

Oklahoma Water Resources Board v. Foss Reservoir Master Conservancy District. 527 P.2d 162.

PART III: ARKANSAS

INTRODUCTION

Arkansas' water problems stem from its geography and patterns of land use, legislation, and resource management in the State. Arkansas is divided into three general areas, the delta, the Ozarks and Ouchitas, and the Gulf coastal plain. In the delta in the east and southeast, there are some pesticide, turbidity, siltation, and eutrophication problems. These can, in some situations, lead to an increase in fish production. There are presently no water volume problems in streams in that area.

The northern and northwestern part of Arkansas is the mountainous Ozark region where several large Federal impoundments have created some instream flow problems below the dams. Releases tend to be in surges of water, instead of in a continuous flow; and releases often are made from the bottom of the dam, resulting in much colder water than was originally in the stream. This displaces the native warmwater fish and has led the Game and Fish Commission to plant trout for a coldwater fishery. Trout, however, require a continuous supply of cold water to keep the temperature low enough for the trout to survive. If the continuous cold flow is not maintained, the trout may also die.

The western portion of Arkansas is made up of the Ouachita Mountains, generally south of the Arkansas River. In this region of the State, other large impoundments have raised some of the same instream flow problems. The dams on Lake Hamilton and Lake Catherine were recently relicensed by the Federal Energy Regulatory Commission.

There is no effective system in place to allocate withdrawals of water from Arkansas streams, although State agency personnel are working on this problem. As have many riparian States, Arkansas is experiencing the problems that "permit" or "prior appropriation" systems are set up to avoid.

ARKANSAS SOIL AND WATER CONSERVATION COMMISSION ADMINISTRATIVE PROGRAMS

INTRODUCTION

The Arkansas Soil and Water Conservation Commission (SWCC) is central to water management and instream flow uses in Arkansas. Its many responsibilities and duties make it a focal point of stream protection in this State through its regulation of dams, its administration of compacts, its planning and construction work, and its enforcement activities. This is the logical agency to develop State plans to deal with "excess waters" and eventually to administer any permit system which may be established (Ark. Stat. Ann. 9-118, et seq.; 9-801 - 811; 21-1301 - 1332).

In 1963, the SWCC took over the duties of the Water Conservation Commission, the Water Compact Commission, and the Arkansas Geological and Conservation Commission. The Soil and Water Conservation Commission administers the Section 208 program for Arkansas under the Federal Clean Water Act. The Soil and Water Conservation Commission also is responsible for activities of the former Arkansas Commission on Interstate Cooperation, which formulated proposals for interstate compacts.

The SWCC now has the duty of negotiating with adjoining States to protect and use interstate water and to enter into written compacts (Ark. Stat. Ann. 9-118, et seq.). The Commission is to cooperate with local organizations and districts, Federal departments and agencies, in planning and constructing dams, pools, waterways, and other facilities, and "improvements" on lakes and streams. This State agency is also designated to work with the Corps of Engineers, Bureau of Reclamation, and other agencies in developing water supplies, projects for Federal navigation, flood control, or irrigation whenever water is to be stored. This Commission is to seek the appropriate funding from local entities and is to receive and expend monies from Federal grants distributable by Arkansas.

The Soil and Water Conservation Commission is in charge of studying and determining public policy to prevent floods and to provide data collection (Ark. Stat. Ann. 9-801 - 811). The Commission has the power to clean out, widen, deepen, and otherwise alter natural and artificial streams; to shape banks; to acquire land for reservoir sites; to construct, take over and operate reservoirs; and otherwise to control streamflow. The Commission also has the right of condemnation to acquire real property. Exempted from the control of

the Commission is all land within the boundary limits of presently-existing levee or drainage districts. This Commission, in cooperation with the U.S. Army Corps of Engineers, is the primary State flood control and construction agency.

The Soil and Water Conservation Commission has power to allocate water only during drought conditions. Its present jurisdiction is over dams, dam construction, and financing water programs for irrigation, hydroelectric drainage, impoundment, and supply purposes.

In carrying out its duties to allocate water during periods of drought, the Soil and Water Conservation Commission is beginning to develop approaches to instituting an allocation system when necessary (Ark. Stat. Ann. 21-1301 - 1332). This effort may require State legislation to permit an allocation system along with the present riparian system. Efforts are under way by the Soil and Water Conservation Commission and the Attorney General's office to examine and develop appropriate legislation for consideration by the Arkansas legislature to effect this purpose.

The SWCC has never denied an applicant use of water. The Commission lacks legislative authority to stop the building of a dam and the withdrawal of stream water. In situations in which it presently has authority to act, the Commission must give two weeks notice and a hearing to the user before it can get an order to shut off water.

At present all entities engaged in water planning in the State must submit copies of their plan to the SWCC, which has power only to review these plans, not to stop the projects.

CONSTRUCTION PERMITS

Opportunity

State policy is to "maintain the normal flow of all streams and preserve the fish therein ... and to conserve the natural resources of the State of Arkansas" (Ark. Stat. Ann. 21-1301 - 1332). To fulfill this policy, the Soil and Water Conservation Commission can issue permits for the construction of dams to impound water, issue certificates of registration for water diverted from streams, allocate water during periods of shortage, and promulgate rules and regulations for these purposes.

Background

Fifty-year permits for dam construction may be granted only after a hearing and are required before any dam is constructed. Each permit is supposed to include conditions on the daily discharge of a quantity of water, established by the Commission, to preserve the streamflow to protect downstream riparian owners and fish and wildlife. Exceptions: (1) a landowner may collect water arising on his land as long as he does not affect a stream; and (2) permits are not required for dams which impound less than twenty acre-feet

of water, dams below the ordinary high water mark on the stream, and dams constructed by drainage or levee districts. In Arkansas, most dams in practice permit instream flows for fish preservation downstream; the statute appears to work.

The permit used by the Commission includes a condition which operates to protect streamflows. The Soil and Water Conservation Commission usually imposes a 2 cfs release requirement on all dams in the State. The reason the Soil and Water Commission does not generally enforce more stringent conditions is that many dams are on intermittent streams. If the stream is ever dry during the year, a dam developer is free to dry up the stream at other times. This approach, of course, ignores the fact that fish may migrate up and down streams at various times of the year.

COURT DECREES

Opportunity

Other statutes also govern dams. In Arkansas, owners of the lands on both sides of a non-navigable stream may dam the streams at will (Ark. Stat. Ann. 35-501 - 526). If the dam will overflow another person's lands, however, the dam builder must petition the Circuit Court of the county for permission to create the dam. A special jury shall be called to inquire into the matter and establish the value of the lands taken. The court has the power to require that fish must be allowed to bypass the dam and to make other requirements of the builder.

Background

Dams which have not been built lawfully are to be treated as nuisances under Section 35-524. It is possible to ascertain, through examining the records of the Circuit Court, whether dams on streams of concern have been built lawfully. In some instances, having them declared a nuisance could remove them permanently from the stream.

A provision of the criminal statutes requires that any person owning, operating, or controlling any dam or construction across any river, creek, or other stream must keep the dam open in order to permit sufficient water to maintain fish life in the stream below the dam (Ark. Stat. Ann. 41-4053). The penalty for violating this provision is a \$100 to \$500 fine. Local District Attorneys can seek criminal penalties for dam owners and operators who fail to provide sufficient water downstream of their dams. Obstructing natural drains and leaving tree tops and debris in streams can also be misdemeanors (Ark. State. Ann. 41-4051, 41-4066).

The Commission can: (1) establish adequate discharge requirements for each dam; and (2) enforce the statutory requirements so that in all circumstances instream flows adequate for fish and wildlife are maintained. Penalties are provided for a fine of up to \$500 a day for each day of violation.

CONDITIONS ON DIVERSIONS

Opportunity

Diversion of water from streams, lakes, and ponds, except for natural lakes owned by an individual, requires registration of the diversion with the Commission (Ark. Stat. Ann. 21-1316). This registration is designed to indicate the amount of water used and the purpose and location of use. In allocating water in time of drought, the Commission is to restrict withdrawals to domestic use unless registration has been completed.

Background

Non-riparian uses of water are not to supersede or take priority over riparian rights to divert water under this statute. When allocating water during shortage, the Commission is governed by statutory preferences for sustaining life, maintaining health, and increasing wealth (Ark. Stat. Ann. 21-1316). Instream flow does not appear an obvious part of any of these preferences, and, during times of drought, instream flows may be without protection.

Evaluation

Because clear statutory authority to allocate "excess water" is lacking, protection of instream uses through administration of diversion permits or registrations is not now a realistic possibility.

STATE WATER PLAN

Opportunity

The Soil and Water Conservation Commission has developed a comprehensive general program and plan for development and management of the State's water resources (Ark. Stat. Ann. 21-1318). In developing and revising the plan, the Commission is to have regard for the public interest, existing water rights of the inhabitants, and modes for adjustment of individual water rights affected by the plan.

Background

All State agencies, commissions, and public political subdivisions are to take the Arkansas Water Plan into consideration in matters affecting them; they are not to engage in any water development until they have filed plans with the Commission.

This statute gives the Commission the power to review all water development activity in the State. The SWCC can keep track of activities affecting streams in the State and can seek to promote instream flow in conditions that the Commission may make upon these development projects.

In 1975, the then Division of Soil and Water Resources developed an Arkansas State Water Plan. The Soil and Water Conservation Commission is presently in the process of updating this plan through the Governor's Water Policy Task Force, which includes members from the Soil and Water Conservation Commission, the Governor's office, the Health Department, the Geology Commission, the Department of Local Services, the Department of Pollution Control and Ecology, the Water Waste Commission, the Wild and Scenic Rivers Commission, the Department of Economic Development, the Game and Fish Commission, the Department of Parks and Tourism, and the Ozarks Regional Commission. As this new State water plan is developed, it offers an opportunity for instream flow to be explained. The document may have importance beyond its apparent lack of authority. The 1975 plan points out that implementation of the State water plan lies largely with the legislative and executive branches of the State government. The 1975 plan identifies three basic and pressing issues: (1) the question of inter-basin transfer, illegal under riparian doctrine; (2) subsurface water use, which was at that time not regulated at all; and (3) an effective water use reporting system.

The Commission is also charged with the duty of compiling water use information for the State (Ark. Stat. Ann. 21-1315). This work can be used as a data source for protecting waters in the State.

SOIL CONSERVATION

Opportunity

Among the primary purposes of the Arkansas soil conservation statutes are prevention of silting and sedimentation of stream channels, destruction of spawning beds and aquatic plants, and prevention of erosion and flooding (Ark. Stat. Ann. 9-901 - 938).

Background

The responsibilities of soil conservation districts include developing comprehensive plans for flood prevention and water conservation within the districts [9-909(6)]. One of these districts exists in each county, with two in Mississippi County. After hearings and a referendum among the landowners, the supervisors of each district may formulate and adopt land use regulations governing land within the district. The district, in carrying out these plans, may assess benefits and damages, and has, in effect, the power of condemnation.

Since these land use regulations have not been developed by any district, the hearing and referendum requirements under section (9-910) may be used in several ways: (1) regulations may be detrimental to streamflow, which can be discovered in the hearing process; and (2) instream flow needs and values of instream flow may be included in land use regulations. Because these regulations have the power of ordinances and are binding upon all landowners in the district, they are a powerful tool in land use and stream flow regulation. They may govern engineering operations, dams, and methods of cultivation.

The Board of Supervisors of a district, after petition by a majority of the landowners, may adopt a proposed plan for construction of improvement works to prevent erosion, flood water, and sediment damages, or for water conservation. This plan must be submitted to appropriate governmental agencies for comment. After adopting a proposed plan, the Board of Supervisors for the district must file the plan with the Chancery Court of the county, which must give notice and hold a hearing on the plan. This plan, if adopted, has the force and effect of a judgment from the court.

INTERSTATE COMPACTS

Opportunity

The Arkansas Soil and Water Conservation Commission is now responsible for formulating proposals for interstate compacts. Three compacts presently affect streams in Arkansas (Ark. Stat. Ann. 21-2101; 9-1601, et seq., 82-1974, et seq.).

Background

The Arkansas River Basin Compact of 1970, between Arkansas and Oklahoma, is designed to apportion the waters of the Arkansas River equitably between Arkansas and Oklahoma (Ark. Stat. Ann. 21-2101). The specific provisions of the compact may affect instream values in some streams. The Arkansas-Oklahoma Arkansas River Compact Commission is the appropriate body for assistance in determining whether the compact requirements are being met.

The Red River Compact between Arkansas, Oklahoma, Texas, and Louisiana divides and provides for the management of the Red River Basin (Ark. Stat. Ann. 9-1601, et seq.). It apportions the water within topographical subbasins, and within the year. The compact sets up an administrative agency, the Red River Compact Commission, with broad powers to administer the river to ensure that the compact is followed. As of this writing, the compact is awaiting approval by Congress. This compact can establish the obligations of each State in the entire Red River Basin. Within administration of the compact, there may be some flexibility to provide for additional instream uses; to do so, the specific requirements of the compact must be considered.

The Interstate Environmental Compact was set up to deal with pollution which crosses State lines (Ark. Stat. Ann. 82-1974 - 1976). The compact provides that the States may participate jointly in undertaking to protect the interstate environment and that any two or more States may enter into additional agreements relating to interstate pollution problems. This compact grants Arkansas the power to enter into supplementary agreements with her sister States which may affect instream uses of water. Instream values may be considered in these supplementary agreements.

Example

The Illinois River runs through Washington and Benton counties in Arkansas and then into Oklahoma, where it has been designated a recreational

river. Under the Interstate Environmental Compact, Arkansas has agreed not to contaminate waters crossing into Oklahoma. The upper thirty miles of the river, in Arkansas, do not have a protective designation. The two counties proposed a joint sewage disposal plant in 1979-80. Oklahoma objected under its compact with Arkansas and succeeded in having the plan for the sewage treatment plants dropped.

SOURCES

Statutes and cases summarized in the text are not listed here.

Alexander, H. E. 1965. Problems and Progress in Stream Preservation. Transactions of the North American Wildlife and Natural Resources Conference. March.

Arkansas Committee on Stream Preservation Report. 1969. Committee on Stream Preservation. February.

Bryniarski, A. J. 1980. Water Resources Engineer Supervisor, Arkansas Soil and Water Conservation Commission. Personal communication. 17 July.

King, K. 1980. Office of the Solicitor, Department of the Interior. Personal communication. 14 July.

Mack, L. 1963. Water Law in Arkansas. October.

Mays, P. D. 1980. Draft Update to Arkansas Water Law. Unpublished manuscript.

_____. 1980. Counsel to the Arkansas Soil and Water Conservation Commission. Personal communication. 17 July.

Robinson, H. G. 1978. Deputy Director of Civil Works, U.S. Corps of Engineers. Letter to A. D. Hulsey, Director, Game and Fish Commission, Little Rock, Arkansas. 17 August.

U.S. Water Resources Council. 1980. State of the States: Water Resources Planning and Management. April.

Young, J. R. 1980. Deputy Director. Arkansas Soil and Water Conservation Commission. Personal communication. 17 July.

GAME AND FISH COMMISSION

INTRODUCTION

The Arkansas Game and Fish Commission is a constitutional body with broad and actively exercised powers to manage and conserve Arkansas' wildlife and fisheries resources and a \$10 million budget.

It is not primarily an enforcement agency, but a unique body which administers its own regulations and has constitutional authority to manage all fish and game in the State. Relying on Amendment No. 35 to the Arkansas Constitution, the Game and Fish Commission has developed and adopted a Code, and has declared that any laws in conflict with the Code are repealed (Arkansas Game and Fish Commission, 1980).

EMINENT DOMAIN

Opportunity

The constitutional amendment directly gives the power of eminent domain to the Arkansas State Game and Fish Commission for all property necessary, useful or convenient for the Commission (Ark. Const. Amend. No. 35, § 8).

Background

The Arkansas Supreme Court has restricted this power somewhat and has determined that the Commission does not have the power to acquire lands by eminent domain to establish public shooting grounds [Arkansas State Game and Fish Commission v. Gill, 260 Ark. 140, 538 S.W.2d 32 (1976)]. The Commission must act only for the control, management, restoration, conservation, and regulation of wildlife. The use of eminent domain for protection of instream flows, however, so as to protect and manage fish populations, would seem to be well within the constitutional powers of the Commission.

REAL ESTATE

Opportunity

In some cases, when funds are available, it is possible for the Game and Fish Commission or the Governor to purchase, acquire, or set aside game and fish refuges which additionally benefit instream uses.

Background

The Game and Fish Commission has the power to own real property (Ark. Stat. Ann. 47-101 - 136). The Commission may also apply to the State Land Commissioner for transfer of title of lands reverted to the State for taxes, which would be useful to the Game and Fish Commission for refuge, hunting or fishing, or other purposes. Monies arising from the operation of the Commission are to be placed in the Game Protection Fund, from which the Commission can draw funds to match Federal grants. The Game and Fish Commission can seek ownership of land seized for taxes which may affect watersheds of critical streams, and for key fisheries protection areas. The Arkansas Forestry Commission manages timber on lands owned by the Game and Fish Commission.

In addition to purchase and condemnation, this commission can acquire lands by gift. Game and fish refuges may be created by petition and gift to the Game and Fish Commission, which may also purchase suitable lands for game refuges (Ark. Stat. Ann. 47-701 - 711). The Governor may also set aside from State lands game and fish refuges of over 5,000 acres.

DIRECT ACTION

Opportunity

Two statutes give the Game and Fish Commission authority to intervene in situations that threaten streams. From 1 March until 1 June, operators of all dams and obstructions across rivers, creeks, and other watercourses must open the dams sufficiently to permit free passage of all fish up and down river (Ark. Stat. Ann. 47-512). Dams for mills and manufacturing are exempted from this requirement. Under Section 47-514 it is also a misdemeanor to block or dam any stream or body of water so that fish do not have free and easy passage.

Background

Of particular interest is Section 47-515, which makes it unlawful for any person, firm, or corporation to lower the natural stage of any body of water to a point whereby the existence of fish therein is endangered. Such action is a misdemeanor and may result in a fine of \$100 to \$1000. Under the Commission Code, Section 32.19, a \$200 to \$500 penalty is established for blocking or damming any stream "so as to restrict a sufficient flow of water to maintain fish life downstream." A penalty also exists under the Code for lowering any body of water "so as to endanger fish life" (Ark. Game and Fish Commission Code Book, § 32.20).

Usually, persuasion is sufficient to stop unlawful impoundments which lead to fish kill. The statute which requires that dams permit the passage of fish is not enforced, as simply a matter of judgment, by the Game and Fish Commission. Good fishing streams are generally not present in farming country, where such dams are common.

There are some problems with diversions in the Delta using too much water. If such a report is received by the Game and Fish Commission, the enforcement division will advise the violator of the problem. The statute is generally not enforced because the fish being destroyed are usually "rough fish" in a pond or low stream in the Delta region, and the violator is a businessman/farmer trying to save a large crop of rice or other agricultural products. The Game and Fish Commission is not as concerned about "rough fish" as about sport fish.

STATE-FEDERAL COOPERATION

Opportunity

The Game and Fish Commission cooperates with Federal water development agencies in reviewing and designing projects.

Background

Cooperation between Arkansas Game and Fish and the U.S. Army Corps of Engineers has begun to solve several serious streamflow problems in Arkansas.

In 1973, the U.S. House and Senate Public Works Committees resolved that the Corps of Engineers was to review the White River with a view to modifying present operations and recommendations so as to provide, among other things, for fish and wildlife. Largely as a result of the thorough study and report filed with the Corps by the Arkansas Game and Fish Commission in 1975, the comprehensive report by the Corps will include development of a mathematical model by which alternatives for storage and operation can be evaluated in terms of their effect upon fish and wildlife. Interim recommendations are welcomed by the Corps and will be implemented when possible.

Example

On Lake Greeson in Pike County, built in the 1950's, a problem arose. When downstream trout started dying, the Game and Fish Commission asked the U.S. Army Corps of Engineers for more cold water to save the fish; when not enough cold water was available, the Commission asked for a warm water flow regime to establish a warmwater fishery. After required public meetings, at which Game and Fish Commission personnel explained the reasons for the requests, the Corps issued a letter saying that changing from cold to warm water releases was feasible. The correspondence includes data indicating that the change in water temperature is possible. Although altering projects can require congressional action, this minor alteration can be done without congressional approval.

Evaluation

Interagency cooperation is effective and less expensive than lawsuits. It can protect streamflows by modifying projects, although halting or canceling proposed projects may require more than persuasion.

SOURCES

Statutes and cases summarized in the text are not listed here.

Alexander, H. E. 1980. Consultant to the Arkansas Game and Fish Commission. Personal communication. 17 July.

Arkansas Committee on Stream Preservation Report. 1969. Stream Preservation in Arkansas. February.

Arkansas Game and Fish Commission. 1980. Code Book. Game and Fish Commission.

Donham, W. H. 1980. Counsel to the Arkansas Game and Fish Commission. Personal communication. 17 July.

Federal Energy Regulatory Commission Order Issuing New License to Arkansas Power and Light Company. 1980. Project No. 271. July.

Grimes, J. S. 1963. Lex Aquae Arkansas. 27 Ark. Law Review 429.

Keith, E. W. 1980. Fisheries Commission, Arkansas Game and Fish Commission. Personal communication. 17 July.

Mack, L. 1963. Water Law in Arkansas. October.

Mays, P. D. 1980. Draft Update to Arkansas Water Law. Unpublished manuscript.

Robinson, H. G. 1978. Deputy Director of Civil Works, U.S. Corps of Engineers. Letter to A. D. Hulsey, Director of Game and Fish Commission, Little Rock, Arkansas. 15 August.

OTHER STATE AGENCIES

DEPARTMENT OF PARKS AND TOURISM

Opportunity

Acquisition of parks can include areas in which water is of central importance; trails can include water routes to protect streamflows (Ark. Stat. Ann. 9-601, et seq.).

Background

The Arkansas Parks, Recreation and Travel Commission, within the Department of Parks and Tourism, has the power of condemnation, purchase, and lease to acquire land necessary for the State park system (Ark. Stat. Ann. 9-601 - 623). The Department and Commission also have the right to issue bonds, the principal and interest of which may be paid out of the State parks fund. Before such parks may be established, extensive consultation is required, which may include instream flow considerations. In some circumstances, State parks may be located in order to protect instream uses. Because "land" is construed in this statute to include water and land under water, it is possible that parks may be developed in which water is the most prominent feature.

The Arkansas Trails System Act (Ark. Stat. Ann. 9-603.1, et seq.), within the jurisdiction of the Department of Parks and Tourism, Parks Division, defines "trail" to include any route to provide specific recreational experiences to the public, including boating and canoeing. A Statewide trail system is administered through the Parks Division of the Department of Parks and Tourism, which develops a wide variety of trails and maintains them. The Arkansas Trails Council is an advisory body established to inform the Parks Division of public need and use of planned trail development. This Council is a voluntary organization open to representatives of State agencies, Federal agencies with an interest in trail development, local government, private landowners, and trail users. This Council may make suggestions to the Parks Division, review nominations for the trail system, and update the Arkansas trails plan. The Trails Council does not have power of eminent domain. The Trails System Act includes routes used for boating and canoeing, and invites participation by both governmental and private groups.

Evaluation

Although this Act lacks enforcement powers to maintain instream flows, designation of a stream as a portion of the Arkansas Trail System may be of assistance in proving that it is, in fact, a recognized recreational facility, a uniquely valuable stream, and one that should be preserved. These approaches are relatively inexpensive, popular, and conceptually simple and direct.

DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY

Opportunity

The review and permit powers of this department offer some protection to streamflows and stream quality (Ark. Stat. Ann. 5-908).

Background

The Department of Pollution Control and Ecology now exercises the functions of the earlier Water Pollution Control Commission, and includes a division of environmental preservation. This division is:

...responsible for reviewing and making specific ecologically-oriented recommendations on all plans, programs and projects of all other state departments, divisions, agencies and commissions, and upon all federal plans, programs and projects affecting this State. To this end, all other departments, divisions, agencies and commissions within this state are directed to cooperate with the Department of Pollution Control and Ecology... (Ark. Stat. Ann. 5-908).

This statute gives the Department of Pollution Control and Ecology the powers to review and recommend. These powers, though limited, oblige governmental agencies to cooperate. All State agencies are required to submit their plans to this Department for review and recommendations. In this way, the Department gets a good look at what the other agencies are planning to do, an opportunity to make recommendations, and, if the recommendations are not followed, is at least aware of what is intended, so that other steps may be taken. The Commission may also call upon any other State agency for assistance in carrying out this work (Ark. Stat. Ann. 82-1903).

The Department is authorized to administer on behalf of the State its own permit program for discharges in lieu of that of the Environmental Protection Agency under the FWPCA (Clean Water Act), and to carry out any acts necessary for State participation in the National Pollutant Discharge Elimination System (NPDES) (Ark. Stat. Ann. 82-1901 - 1991).

ARKANSAS NATURAL AND CULTURAL HERITAGE COMMISSION

Opportunity

This Commission is less powerful than the Game and Fish Commission but offers some specific opportunities to protect streams through timber protection and natural areas (Ark. Stat. Ann. 47-135; 9-1401, et seq.).

Background

In 1975, the Arkansas Department of Natural and Cultural Heritage took over the duties of the following agencies and departments, among others: Arkansas Historical Preservation Program and the Arkansas Environmental Preservation Commission (formerly the Natural Heritage Commission). The Arkansas Natural and Cultural Heritage Advisory Committee was also created to advise the Director of the Department and the Governor of the adequacy of operation of all the programs within the Department.

Before the Game and Fish Commission permits timber cutting on its lands, an environmental impact study and statement must be prepared and filed with the Natural and Cultural Heritage Commission, which shall then hold a public hearing on the question (Ark. Stat. Ann. 47-135). In some circumstances, timber operations may critically affect an important reach of stream, and conservationists should seek to have stream values represented in negotiation and drafting of the EIS.

A State system of natural areas consisting of land, waters, and interests therein is to be administered by this commission, which shall choose lands and waters to be acquired, hold them, regulate them, and maintain a registry or inventory of lands and waters that retain their "primeval character to a substantial degree" or that are of other interest (Ark. Stat. Ann. 9-1401 - 1416). This Commission also advises the U.S. Departments of Agriculture and Interior on streams or areas eligible for treatment as Federal wildlife refuges, wilderness areas, or wild, scenic or recreational rivers. This Commission is limited in the amount of land it may purchase, and must choose its properties according to these standards: areas representative of types of land in Arkansas; areas supporting substantially undisturbed species; areas of unusual aesthetic or ecological quality; and buffer zones.

The Commission may accept scenic, conservation, or environmental easements upon dedication by the owner. This provision for environmental easements can be of substantial value to the private property owner and to the public, because it helps reduce taxes to the private property owner while it ensures to the public that the character of the land will not change. Interests in land created by dedication to the Commission may not be altered, changed, or modified without public notice, hearings, and a finding by the Commission that the change is required by imperative public necessity.

PLANNING AGENCIES

Opportunity

State planning offices may include streamflow needs early in the planning of State development projects (Ark. Stat. Ann. 5-901; 9-301; 9-319; 9-325, et seq.; 9-1301, et seq.).

Background

The State Office of Planning. The responsibility of this office is to prepare and adopt an official State plan for physical development, including waterways, waterfront development, flood prevention work, pollution prevention, forests, parks, refuges, and general land use programs (Ark. Stat. Ann. 9-301). As this official State plan is developed and revised, it may provide for the preservation and protection of streamflows in Arkansas. The State plan, once adopted, must be followed by all State and public agencies when acquiring property and may be helpful in limiting or rerouting development which would be harmful to streamflows.

The Department of Local Services. This department is also a planning organization which is to prepare and update a comprehensive plan for outdoor recreation resources, to apply for Federal funds and to distribute such funds to various State agencies or subdivisions (Ark. Stat. Ann. 9-319). The Department is to provide planning assistance to municipalities and other subdivisions of the State in undertaking studies, renewal plans, and other planning work, and in applying for grants from the Federal government in connection with such studies.

Governor's Office. An Office of Planning in the Governor's office supervises State planning programs to ensure that they are administered in accordance with State plans (Ark. Stat. Ann. 5-901). This office also assists in the planning efforts of other agencies and regional organizations. The Governor's Office of Planning may be a route of appeal or assistance, if the planning agency is uncooperative.

Under the Unusual Natural Area Preservation statute, the Office of Planning is to establish a program to preserve areas of unusual natural significance and aesthetic value (Ark. Stat. Ann. 9-301 - 1305). This program is to include a survey, studies on means of preservation, and a study to determine which State agency should hold title to each area. The Office of Planning is not, however, to be granted additional State funds to carry out the provisions of this act, but is rather to depend upon available Federal financing. The types of areas listed in the statute include "free-flowing springs, waterfalls ... shady groves adjacent to streams and lakes." Instream flows will, of necessity, be a portion of these designated natural areas in the State. Quality streams may be included in this system and within other systems under other preservation statutes; the funding limitations of this program, however, restrict its usefulness.

Planning and Development Districts. These districts exist in eight economic districts of the State (Ark. Stat. Ann. 9-324 - 328). These development districts are voluntary, non-profit associations aimed at helping local governments and organizations receive Federal grants, preparing comprehensive regional plans for economic development, and coordinating private and public programs. The districts are given broad discretion in their operations and planning. In some instances, Arkansas will match non-Federal funds.

Although these districts may seem far removed from instream flow considerations, the economic and planning activities they perform can have a profound influence on water use. The Board of Directors of a Planning District makes plans which, in effect, distribute land for various types of use; these Boards may be able to protect critical stream reaches.

NATURAL AND SCENIC RIVERS

The Natural and Scenic Rivers Act (257 Ark. Session Laws 1979) permits intermittent and irregular streams to be included in the system. Natural rivers are defined as those which may have primitive, undeveloped roads, while scenic rivers are "largely free" of impoundments. In other words, rivers and streams may be in an altered state and yet qualify for this system. The Commission is to evaluate and recommend rivers for inclusion, while the General Assembly is to designate rivers. After the Commission has selected a river for potential inclusion, the Commission is to establish an advisory committee to assist in planning for the protection of the river. The Commission does not have power of eminent domain, and any management plan it adopts must be approved by the Quorum Court of the county in which the river is located.

Evaluation

The river designation procedure, as presently set up, is cumbersome; dependent on the county Quorum Court, it is unlikely to lead to broad and rapid designation of rivers. Specific legislation, while expensive and difficult to pass, may be preferable to the existing procedures.

For example, the Kings River in Madison County is to be preserved wild, unpolluted, and natural (Ark. Stat. Ann. 82-1910). It is illegal for anyone to construct any permanent dam or other structure impounding water on the principal bed of the river except for water gaps essential for farming operations. This statute carries criminal penalties.

The State Committee on Stream Preservation (established in 1967) prepared a report entitled Stream Preservation in Arkansas: Report of the State Committee on Stream Preservation (1969). The report focuses on five Arkansas streams, and is a good general introduction to the problems of Arkansas streams, containing some valuable data including information about fish species, flow data, and temperature. The report also contains some interesting Arkansas history. The State Committee on Stream Preservation was abolished in 1978.

SOURCES

Statutes and cases summarized in the text are not listed here.

Alexander, H. E. 1980. Consultant to the Arkansas Game and Fish Commission. Personal communication. 17 July.

Arkansas Committee on Stream Preservation Report. 1969. Stream Preservation in Arkansas. February.

U.S. Water Resources Council. 1980. State of the States: Water Resources Planning and Management. April.

CITIES, COUNTIES, AND AUTHORITIES

CITIES AND COUNTIES

Opportunity

Cities and counties are empowered to take a number of actions that may affect instream uses (Ark. Stat. Ann. 13-1901 - 1913; 17-315; 17-1420; 17-1107).

Background

Pollution Control. Counties and cities are permitted to own, construct, contract, or make loans to finance pollution control facilities, and may issue bonds for this purpose (Ark. Stat. Ann. 13-1901 - 1913). "Pollution control facilities" are defined broadly enough to include water and interests in water, and the entire statute is drawn broadly and liberally in order to promote and make available pollution control facilities of every type. These may include augmenting streamflow in conjunction with water pollution control programs.

Eminent Domain. Arkansas counties possess the right of eminent domain in lands, interests, easements or servitudes, for the purpose of flood control (Ark. Stat. Ann. 17-315). It is possible that some counties may be more receptive than municipalities to the maintenance of natural instream flows and flood plains as an inexpensive means of flood control. Instream uses might be protected through exercise of riparian rights.

Plans. Unincorporated rural communities and small incorporated towns may adopt written plans for community projects, submit them for approval to the county Quorum Court, and, if the court appropriates county funds for one quarter of the project, may then be granted State funds for such community projects (Ark. Stat. Ann. 17-1420 - 1423). These projects may include parks, playgrounds, and athletic facilities. In some situations, a community project of this sort could include stream use in a manner that would promote instream flow maintenance: fishing streams, parks, bicycle trails along streams, and recreational boating would all qualify.

Planning Boards. A county planning board may be created by the county judge of any county with the approval of the county Quorum Court. The county Quorum Court may, instead, assume the duties of a planning board (Ark. Stat. Ann. 17-1107 - 1116). Planning boards are to prepare a plan for the county,

recommend ordinances, and advise the Quorum Court on planning matters. County plans are to include recommendations about conservation of natural resources, provision of recreation facilities, and protection of areas of environmental concern. "Areas of critical environmental concern" include aquifers and aquifer recharge areas, floodplains, wetlands, habitats of rare or endangered species, unique ecosystems, and other protected areas. The county plans may include establishment of special zoning districts, acquisition of easements or land, and specialized development policies. If a county plan is adopted by the Quorum Court, any improvement may be made only after plans for the improvement are submitted to the county planning board and a report and recommendation is made by that board. County Quorum Courts shall provide for enforcement of the plans.

Instream flow needs and values can be incorporated in all county plans which cover streams of concern. Enforcement costs are borne by the county.

Ports and Harbors. Cities have the power to establish ports and harbors and to deal in the necessary facilities for ports and harbors; they may issue revenue bonds to accomplish these purposes (Ark. Stat. Ann. 19-2701 - 2748). Cities also have the power of eminent domain to accomplish these purposes. As riparian landowners and users of the waterways for these ports and harbors, cities should be able to require the maintenance of instream flows on streams supplying water to their ports and harbors.

Water Supply. Municipalities may operate water systems to supply their inhabitants with water, and may take title to lands, lakes, watercourses or other water supplies inside or outside Arkansas in order to do so (Ark. Stat. Ann. 19-4201 - 4276). These water supplies may be paid for by the issuance of bonds and may be assisted by the right of eminent domain. Whenever instream flows impinge upon or assist in the production of water for municipal use, the municipal officers should be alerted to any threat to that flow regime, so that they may exercise their considerable powers to maintain the flow to provide water to the city and, incidentally, to maintain it for instream use.

Other Boards. Cities and counties may create one or more public facilities boards and empower them to take steps to provide for recreational and tourist facilities, including scenic roadways and walkways, marinas, parks, and other facilities for recreation and the promotion of tourism. These boards may issue bonds to accomplish the projects (Ark. Stat. Ann. 20-1701 - 1720). Under this recent statute, conservation interests may have yet another public agency interested in maintenance of streamflows for recreational use. These boards may purchase riparian land and maintain the streams, especially in critical stream reaches which may be useful for fishing and boating.

OTHER AUTHORITIES

Opportunity

Other authorities and special service districts have powers which may effect the protection of instream uses (Ark. Stat. Ann. 20-1401, et seq.; 21-601; 21-91).

Background

Rural Development Authorities. Although the primary purposes of rural development authorities are to promote employment and economic development of rural areas, in certain circumstances these authorities may take steps which affect streamflow. If properly prepared and informed, they could exercise a beneficial effect on streamflows in the State (Ark. Stat. Ann. 20-1401 - 1424). Rural development projects may include acquisition of land for fish and wild-life propagation and recreation, flood prevention, and watershed protection. These projects can include construction of dams, wells, reservoirs, and other devices for the use of water for agricultural, domestic, industrial, and other purposes. Rural development authorities may issue bonds to fund their projects and may borrow money from the Federal government to aid their projects.

In some instances, when a critical reach of stream falls within one county, the rural development authority may have access to funds which will protect the stream as well as watershed and recreation possibilities.

Levee Districts. Levee districts, formed in Arkansas counties with frequent floods, are like improvement districts (Ark. Stat. Ann. 21-601 - 656). Whenever drainage or levee districts construct dams or other facilities for flood control and other water management, streams may be affected. These districts are authorized to contract with the U.S. Corps of Engineers and other Federal agencies for their projects.

Irrigation Districts. Irrigation districts and watershed improvement districts are empowered to construct and maintain pools, lakes, dams, and the like for irrigation, flood control, drainage and recreation, fish, and wildlife (Ark. Stat. Ann. 21-91 - 934). Districts under this statute are authorized to contract with the United States in developing plans for construction of facilities, and may make assessments against property to be benefited by the facilities. The first irrigation district in Arkansas is now being formed for Peckerwood Lake.

SOURCES

Statutes and cases summarized in the text are not listed here.

Alexander, H. E. 1980. Consultant to the Arkansas Game and Fish Commission. Personal communication. 17 July.

Bryniarski, A. J. 1980. Counsel to the Arkansas Game and Fish Commission. Personal communication. 17 July.

Mays, P. D. 1980. Counsel to the Arkansas Soil and Water Conservation Commission. Personal communication. 17 July.

Young, J. R. 1980. Deputy Director, Arkansas Soil and Water Conservation Commission. Personal communication. 17 July.

UTILITIES

OPPORTUNITY

The Arkansas Public Service Commission is a forum for the expression of instream needs (Ark. Stat. Ann. 73-276.3, et seq.).

BACKGROUND

Certificates

A certificate of environmental compatability must be issued by the Public Service Commission before construction of a major utility in the State (Ark. Stat. Ann. 73-276.3, et seq.). The Public Service Commission may exempt utility facilities under its rules and regulations if those utilities are unlikely to have major adverse environmental impacts. When an application for certificate is made, the applicant must provide an environmental impact statement. The Public Service Commission shall invite comments from all Arkansas agencies with the duty of protecting the environment (specifically including the Arkansas Game and Fish Commission, the Department of Pollution Control and Ecology, and the Arkansas Environmental Preservation Commission) within sixty days. A hearing must be held, and the decision of the Commission must be made on the record with supporting findings of fact. The public utility statute specifically leaves intact the power of the Department of Pollution Control and Ecology.

The Arkansas Public Service Commission may require the owner of any dam constructed for power generation to build and keep open a chute over the dam sufficient for the passage of fish either ascending or descending the stream (Ark. Stat. Ann. 73-2004). This statute governs dams constructed since 1957, and may allow flow releases from dams which do not fall under the requirements of the new construction statutes.

Reporting

The proprietor of any structure crossing a navigable stream must file with the Public Service Commission certain information which may be of value to the instream flow advocate (Ark. Stat. Ann. 73-2001). The proprietor must file a profile plan which shows, with respect to the surface level and to the bed of the navigable waterway, the elevations of the proposed structure. He must also file a general description of the physical nature of the bed underlying the navigable waterway where the crossing is to be constructed.

RIPARIAN RIGHTS

OPPORTUNITY

Riparian landowners may be able to assert their rights to protect stream-flows.

BACKGROUND

In Ark. Stat. Ann. 1-101, Arkansas adopted the English common law as it existed before the year 1607. By this means, Arkansas has attempted to adopt the riparian theory of water law.

In fact, the riparian doctrine had its substantive beginnings in the common law of England, sometime after the reign of James I. Since the reign of James I, or approximately 1604, it appears that many of the English water law cases applied the concept of first-in-time, first-in-right, i.e., the appropriation doctrine, to disputes between millsites.

The riparian doctrine, whenever adopted, provides that only owners of land along a stream have any rights to its waters. In the United States the riparian doctrine has been divided into two versions: the natural flow and the reasonable use versions.

The natural flow version is thought to be the traditional English version and simply states that every "riparian owner" is entitled to the undiminished flow of the stream past his property.

A "riparian owner" is a person who owns land which touches the stream. Land may be riparian regardless of its length along the stream. In theory, if only one molecule of soil touches the stream, the land is riparian. Once one leaves the banks of the stream, however, the extent of riparian land becomes a complicated legal issue. In some States, when land is included within a larger parcel which touches the stream, that land becomes riparian and stays riparian, regardless of whether or not it is severed by a subsequent conveyance. In other States, land remains riparian only as long as it remains part of the land which is touching the stream and if that land is severed from that parcel, it loses its riparian character. If, for example, a riparian parcel was bisected by a highway which paralleled a stream, in some States the upslope portion of that parcel above the highway would lose its riparian character.

Within riparian law, Arkansas appears to prefer the reasonable use test [*Harris v. Brooks*, 225 Ark. 436, 283 S.W.2d 129 (1955)]. This theory allows each riparian landowner to use the water passing by his land for his own purposes, on the condition that he pay due regard to the effect of that use upon other riparian owners and upon the public in general [Restatement of Torts, Section 1315d (1939)]. Some requirements or tests for reasonableness are: (1) the purpose of the use must be lawful and beneficial to the user and suitable to the stream; (2) the use must have some social utility; (3) the use must be made on riparian land; (4) the quantity diverted must be reasonable in light of the total flow of the stream; (5) the use must not pollute the stream to the harm of lower users; and (6) the manner or rate of flow must not be appreciably altered.

The Arkansas Supreme Court has stated some general rules and principles about reasonable use of riparian water. The right to use water for domestic purposes is superior to other uses. All other lawful uses of water are equal aside from domestic purposes. When two lawful and reasonable uses are mutually exclusive, the first in time will prevail and the later use must be abandoned. Some reasonable uses in Arkansas include domestic use, regulation of flood waters by a dam, fishing, swimming, recreation, irrigation of riparian lands, manufacturing, reclamation by building levees and ditches, straightening out channels, preserving small lakes, and construction of dams for public irrigation.

Unreasonable uses in certain cases have been: activities which pollute waters, obstruction of the watercourse that causes flooding of upper lands, discharge of saltwater into a creek which causes the breeding of saltwater mosquitoes, diversion of the water to the harm of lower landowners, use of the water outside the limits of the watershed, cutting of dams to flood lower owners, and building levees that throw the waters against the opposite bank. In some instances, even an unreasonable use of riparian rights may be supported because a prescriptive easement has been created through the passage of time. The period of time required for adverse possession in Arkansas is seven years; prescriptive easements for use of riparian rights may be established in the same period of time.

In the context of protecting instream uses, the riparian doctrine offers many challenging problems, two of which are of immediate concern: (1) the case law which usually incorporates principles of prior appropriation; and (2) the concept of anticipatory damages or condemnation.

It appears from an analysis of many riparian cases that riparian rights is merely another way, and perhaps a less precise way, of saying appropriative rights. While the case law in riparian States is full of discussion concerning reasonable use or natural flow, when one analyzes the facts of most riparian water law cases it appears that the courts are loathe to curtail the earlier user for the benefit of the later user, regardless of the social value of the later user's proposed use. Consequently, the riparian doctrine may simply be a less specific and less codified version of the prior appropriation doctrine; i.e., first-in-time, is first-in-right.

It may well be unreasonable to expect courts to consistently enjoin upstream uses which interfere with the flow of water needed for instream values when those upstream uses have significant economic value. The practice of condemning riparian water rights (or perhaps covenants not to sue for the violation of those rights) may be the only certain approach available to those public agencies interested in maintaining instream flows.

Many individuals, organizations, and agencies in Arkansas have riparian rights to water. These riparian landowners may protect their rights whenever their use of the stream is threatened or impinged by upstream uses.

SOURCES

Statutes and cases summarized in the text are not listed here.

Donham, W. H. 1980. Counsel to the Arkansas Game and Fish Commission. Personal communication. 17 July.

Grimes, J. S. 1963. Lex Aquae Arkansas. 27 Ark. Law Review 429.

Mack, L. 1963. Water Law in Arkansas. October.

Mays, P. D. 1980. Draft Update to Arkansas Water Law. Unpublished.

_____. 1980. Counsel to the Arkansas Soil and Water Conservation Commission. Personal communication. 17 July.

Restatement of Torts. 1939.

Trelease, F. J. 1974. Water Law: Resource Use and Environmental Protection. 2nd Ed. West Pub. Co.

PART IV: PUBLIC TRUST DOCTRINE

THE PUBLIC TRUST DOCTRINE

OPPORTUNITY

Each State owns certain property which it holds in trust for public uses. It holds this property not as a proprietor, free to sell or exchange it at will, but as a government, which must consider and benefit the entire public in any transaction involving public trust property. The responsibility of the State as trustee is the heart of the public trust doctrine. Under this doctrine, sale or grant of this trust property to private people can be examined very carefully by the courts, which may invalidate such sales or grants if the rights of the public have been slighted.

BACKGROUND

The public trust doctrine has the breadth and substance to be useful as a tool of general application for citizens trying to develop a comprehensive legal approach to resource management problems. It provides the concept of a legal right in the general public, it is enforceable against the government, and it can be interpreted consistently with present concerns for environmental quality. The public trust doctrine is both a source of legislative power and a court-enforced restraint on legislative and administrative power.

It is the duty of the State to exercise its control of the public trust waters within the State borders in the public interest. Cases concerning public trust rights in land can generally be applied directly to interests in water. While the doctrine is ancient, going back to the time of the Romans, vigorous application of it is relatively recent in this country. As a result, many States do not have a well developed body of case law on the public trust. This means that public trust rights in instream flow are not likely to be precluded by previous decisions, but offer a fresh new opportunity for protecting those waters.

As a general rule, public trust waters are navigable waters, and a division of waters into "navigable" and "nonnavigable" is another way of dividing them into public and private waters. This State power of control cannot be surrendered, alienated, or delegated, except for a public purpose or a use which is for public benefit. The power to make rules and regulations governing these navigable waters may be delegated to administrative agencies, however. This power of the State to govern and control public waters is

perpetual, and all privileges or uses granted in public waters are subject to this power.

State grants and administration of water rights fall under the public trust, especially in cases in which State administration of water leads to severe damage to public rights or use of that water. There also appears to be a definite trend to extend the public trust to waters alone, without adjacent lands, and to include nonnavigable as well as navigable waters, regardless of ownership of the stream bed. This trend affects instream flow protection, because, when diversions and other activities in the streams reduce the instream flow and the public right of use is diminished, the public trust may have been violated. It may be possible, in such cases, to rectify the situation by resorting to the public trust doctrine in the courts.

Similarly, wildlife is the property of the State and may be a resource protected by the public trust doctrine in various States. If instream flows are so reduced as to destroy fish and wildlife, it may be possible to use the public trust doctrine to restore the flows.

On the other hand, this public trust doctrine is not a sure-fire way to cure all instream flow ills. It must be examined carefully, and each State's cases and statutes on the question must be thoroughly considered by counsel.

A review of court decisions in this area produces many general statements that seem to say that the government may never sell or alienate trust property by giving it to a private owner and that it may not change the use to which that property has been devoted in the past. Careful study of the cases, however, shows that this language does not, in fact, determine the limits of the State's legitimate authority in dealing with its trust property. There is no general prohibition against disposition of trust properties, even on a large scale. A State may, for example, recognize private ownership in tidelands and submerged lands below the high water mark. On the other hand, courts do not look kindly on such grants and usually interpret them restrictively. What is found in the cases is neither a hair splitting preservation of every inch of public trust property against any change nor a precise maintenance of every historical pattern of use. When the Wisconsin Supreme Court permitted a portion of Milwaukee harborland on Lake Michigan to be granted to a large steel company to build navigation facilities, it made the point clearly:

It is not the law, as we view it, that the state, represented by its legislature, must forever be quiescent in the administration of the trust doctrine, to the extent of leaving the shore of Lake Michigan in all instances in the same condition and contour as they existed prior to the advent of the White civilization in the territorial area of Wisconsin [City of Milwaukee v. State, 193 Wisc. 423, 214 N.W. 820 (1927)].

The traditional cases do suggest that no grant may be made by the State to a private party if the grant is so large that the State will effectively have given up its authority to govern. On the other hand, a grant is not illegal merely because it diminishes in some degree some traditional public use.

The most celebrated public trust case in American law is the decision of the United States Supreme Court in Illinois Central Railroad Company v. Illinois, [146 U.S. 387 (1892)]. In 1869, the Illinois legislature made an extensive grant of submerged lands, in fee simple, to the Illinois Central Railroad. That grant included all the land underlying Lake Michigan for one mile out from the shoreline and extending one mile in length along the central business district of Chicago. This amounted to more than 1,000 acres of incalculable value, including virtually the whole commercial waterfront of the city. By 1873, the legislature had repented of its generosity and repealed the 1869 grant. The legislature then sued to have the original grant declared invalid.

The Supreme Court upheld the State's claim and wrote one of the very few opinions in which direct conveyance of trust lands has been held to be beyond the power of a State legislature. The court did not actually prohibit the disposition of trust lands to private parties; its holding was much more limited. What a State may not do, the court said, is to divest itself of authority to govern the whole of an area in which it has responsibility to exercise its police power. To grant almost the entire waterfront of a major city to a private company is, in effect, to abdicate legislative authority over navigation.

But the mere granting of property to a private owner does not automatically prevent the exercise of governmental authority; for States routinely regulate privately owned land. The court's decision makes sense only because the court determined that the States have special regulatory obligations over shorelands which are inconsistent with large-scale private ownership.

The court pointed out that the title that Illinois held to the navigable waters of Lake Michigan is:

...different in character from that which the state holds in lands intended for sale.... It is a title held in trust for the people of the state that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein free from the obstruction or interferences of private parties.

This language expresses the central theme of public trust cases. When a State holds a resource which is available for the free use of the general public, a court will be displeased with any governmental conduct which will either reallocate that resource to more restricted uses or subject public uses to the self-interest of private parties.

In the development of the public trust doctrine before and after the Illinois Central case, three types of restrictions are often imposed on governmental authority: (1) the property subject to the trust must not only be used for a public purpose, but it must also be held available for use by the general public; (2) the property may not be sold even for a fair cash price; and (3) the property must be maintained for particular types of uses. These types of uses are usually either traditional uses, such as navigation, recreation,

or fishing, or uses which are in some way related to the natural uses peculiar to that resource. For example, San Francisco Bay can be said to have a trust enforced on it so that it may be used only for water related uses. A dock marina might be appropriate, but filling up the bay for trash disposal is not. These three restrictions are at the center of all public trust cases.

The public trust doctrine is supported by a mixture of ideas. One recurring idea is that certain interests or resources are so important to every citizen that the free availability of the resources is imperative. Another idea in these cases is that some resources are so particularly the gift of nature that they should be preserved for the use of the entire population. This idea led to the laws of early New England reserving "great ponds" for general use. A third idea is that certain uses have a particularly public nature which makes exclusive use by private persons not appropriate. For example, it is a general rule of water law that a water user does not own property rights in water in the same way he owns the clothes on his back. He owns only a right of use, which incorporates the needs of others. Water has a public nature which makes its adaptation to entirely private use inappropriate and obliges the government to regulate water use for the benefit of the general community.

A critical question is "What lands or interests in property does the State hold?" Within each State, this question may be answered differently. With respect to waters, this question is often answered in terms of navigation. For example, the State may have declared itself the owner of all navigable waters or have defined navigable waters as waters of a certain width or waters capable of supporting a certain kind of commerce. These definitions may come from the State constitution, legislation, or the courts. In each State, it is important to first look at what the State owns before applying the public trust doctrine to that property, whether it is land or waters.

Some States have declared all waters to be the property of the State. Generally, however, the idea of navigability is fundamentally important to the public trust doctrine. Dividing waters into navigable and nonnavigable waters is another way of dividing them into public and private waters in many States and, therefore, into public trust and non-public trust waters. The Federal test for navigability for determining title to submerged lands derives from the case of The Daniel Ball [77 U.S. 557 (1871)]. This test defines public navigable rivers as those which are navigable in fact, i.e., those which are used or could be used as highways for commerce in the customary mode of trade and travel on water. Navigability for title purposes is to be tested as of the date of Statehood for States other than the thirteen original colonies. This test is rather vague, and capacity for use in commerce may be shown by experimentation as well as by actual use.

States are free to impose the public trust on waters which are not navigable under Federal title standards. States can and do imply their own State tests of navigability to determine whether waters are public for State purposes. Some States have adopted statutory definitions of navigability. For example, in Texas, the statutory test of navigability in non-title streams is whether the stream maintains an average width of 30 feet from its mouth up. Texas

holds title to streams that fit this description in trust for the people. The Michigan test of navigability is the saw log or floating log test. Under this test, a stream is navigable if it can float logs to market. In Wisconsin and Minnesota, the recreational use or pleasure boat test is used. So long as lakes or streams are capable of use for pleasure boating, they are navigable. As the definition of navigability expands through the activity of Federal and State courts, the area of waters and lands subject to the public trust doctrine expands.

This can be seen in a recent Arkansas case, Arkansas v. McIlroy [Ark. Sup. Ct. (Docket No. 79-320, March 17, 1980)]. A riparian owner on the Mulberry River sued a number of canoeists to prevent their traveling down the river, a stream suitable for expert canoeists. The court found that the stream was floatable for six months of the year and expanded the Arkansas definition of "navigability in fact" from the old Federal test of commercial usefulness, which the court described as "a remnant of the steamboat era", to a new test. The court found that the stream was navigable because it could be used for a substantial portion of the year for recreational purposes. The court compared the stream with a public highway, and declared that the neighboring owners could no more close the stream to travelers on such a public waterway than they could close a public highway. An interesting aspect of the case for persons interested in instream flows is that this radically expands the Arkansas definition of navigable waters and should, as a result, expand those portions of Arkansas' streams which are subject to the public trust.

Because public trust law is in a constant state of change and development, principles from other States are useful and sometimes necessary for development of another State's laws.

United States courts have generally been willing to interfere in four types of situations: (1) public property has been disposed of at less than a fair market price when nothing indicates an obvious reason for a subsidy; (2) when authority to make resource use decisions has been granted to a private interest which may subordinate public uses to the private interest; (3) where broadly based public uses have been reallocated to private uses or to narrower public uses; and (4) where the resource is not being used for its natural purposes.

The usefulness of the public trust doctrine in promoting instream flows could arise in the situation in which a State had made an improper grant of some or all of its State owned waters for private purposes to the detriment of the public. This might arise in several ways. A State might have permitted overappropriation to dry up a navigable stream. Suit could be filed against the State to cancel those permits or sales of water, based on the idea that they are invalid because they are in violation of the public trust which the State must uphold. Another example would be an administrative scheme in which a bare minimum of the necessary instream flow was retained, effectively destroying the stream for public use for navigation and recreation. In that case, suit could be brought against the administrative agency of the State.

In any case, using public trust arguments for preserving instream flows involves a court suit, protracted litigation and appeals, but also possibly great rewards. The doctrine is like the reserved rights doctrine to preserve instream flows. It involves considerable costs and risks, but potentially great returns. Flows that are once declared part of the public trust are unlikely to be allocated later to private uses.

Most States have had regretful experiences with the sale of public trust property to private developers and agencies which seem to promote the interests of private developers. Many public trust cases result from efforts to retract the excessive generosity of early State legislatures and land management agencies. Several specific approaches have been adopted to deal with the broad range of public trust questions: (1) State constitution and legislative enactments have restrained sale of trust property; (2) courts and legislatures have required that the public trust be preserved in any sales or grants; (3) sales and leases have been restricted to ensure that they are consistent with the public trust; (4) courts and legislatures have required that sales may be made only for full market value and that the money from the sales is devoted to replacing the trust uses given over to private or to other public Statewide purposes; and (5) courts have read legislation narrowly to limit the power of the government to convey public trust lands and the authority of administrative agencies to dispose of them.

THE WISCONSIN EXAMPLE

The Supreme Court of Wisconsin has worked out a clearer meaning of the public trust doctrine than has any other State. Its cases can be seen as examples of the best use of this doctrine. The first important case, Priewe v. Wisconsin State Land and Development Co. [93 Wisc. 534, 67 N.W. 918 (1896)], invalidated a State statute permitting a promoter to drain a public lake. In later cases, the court has been able to oppose the tendency of the State legislature and administrative agencies to subordinate public advantages to private enterprises.

The Wisconsin Supreme Court has taken the position that when the public interest of a project is unclear, those who promote the project must justify it and cannot simply rely on the old assumptions of legislative wisdom or administrative discretion. This justification can, in fact, be made, and the Wisconsin court has, in later cases, permitted navigable waters to be converted to private status in cases where the broad impact of the change promoted public use.

The Supreme Court established five factors which are useful in evaluating situations in which the public trust doctrine may permit private control: (1) where public bodies will control the use of the area; (2) where the area will be devoted to public purposes and open to the public; (3) where the diminution of lake area will be very small when compared with the whole; (4) where public use of the lake as a lake will be destroyed or greatly impaired; and (5) where the disappointment of those members of the public who may desire to boat, fish, or swim in the area to be filled is negligible when

compared with the greater convenience to be afforded those members of the public trust who use the city park [State v. Public Service Comm'n 275 Wisc. 112, 81 N.W.2d 71 (1957)].

The result of these five factors is that administrative agencies must show, from time to time, that they possess the expertise and concern for the public interest which they claim.

Wisconsin has also developed a line of cases in which the court has held that the governmental body whose decisions are being questioned does not represent the public interest at large. A municipal act might possibly be struck down because the subject matter of the act is a Statewide concern and may be affected only by an action of the State legislature.

In practice, the use of the public rights doctrine in Wisconsin seems to be a way of saying that public interest in recreation is one of the most important of the State's interests to be protected by water law. The public trust is a method used by the courts to protect this interest. The balancing of costs and benefits under this approach can permit, for instance, filling in part of a lake or a park or granting a substantial area of harbor to a steel company for docks and loading facilities.

TEXAS

The Texas Constitution, Art. 16, § 59, provides:

(a) The conservation and development of all of the natural resources of this State, including the control, storing, preservation and distribution of its storm and flood waters, the waters of its rivers and streams, for irrigation, power and all other useful purposes, the reclamation and irrigation of its arid, and semi-arid and other lands needing irrigation, the reclamation and drainage of its overflowed lands, and other lands needing drainage, the conservation and development of its forests, water and hydroelectric power, the navigation of its inland and coastal waters, and the preservation and conservation of all such natural resources of the State are each and all hereby declared public rights and duties; and the Legislature shall pass all such laws as may be appropriate thereto.

Some Texas cases have addressed the question of the public trust in waters, including Motl v. Boyd:

We therefore conclude that Spring creek is a public navigable stream under the statute, and that the title to its waters is in the state in trust for the public.... The waters are in trust for the public: (1) for navigation purposes, which concerns all the public and is ordinarily regarded as a superior right; (2) the riparian waters of

the stream are held in trust by the state for the riparian owners along its margins; (3) the nonriparian waters in the stream are held by the state in trust, to be controlled and disposed of by the state for the best interests of all the people; and (4) the waters are in trust for uses and benefits not here involved. [116 Tex. 82, 286 S.W. 458 (1926)]

Some determinations of stream navigability and attendant determinations of the right of public access might accompany the ongoing DWR water rights adjudication. In its investigation of the Upper Guadalupe subbasin of the Guadalupe River basin the Texas Water Rights Commission (1977) determined:

...the North Fork and the South Fork of the Guadalupe River are navigable watercourses from their mouths up to the area in any claim asserted in this adjudication. As a result of this conclusion, no dam or reservoir constructed in the bed of the North Fork or the South Fork of the Guadalupe River is within the provisions of Section 5.140, formerly Article 7500a, and prior statutory authority, which exempt such a structure from the requirement of obtaining a permit or other legal authority.... In addition, the maintenance of any dam and reservoir on the North Fork or the South Fork of the Guadalupe River was recognized as a part of a riparian right that must not unreasonably impair the public right of navigation and access to and enjoyment of a navigable streamcourse.

Though it is too soon to assess the effect of the Commission's action, such a sweeping declaration of navigability could have a significant impact on settling the nebulous status of particular Texas stream segments with respect to public access. So far, this is the only river segment for which the issue of navigability has been investigated, and it is apparently a highly controversial issue. This declaration was based on a factual investigation of the stream based on Texas' 30 foot definition of navigability. The question of whether the Commission has the power to determine a stream's navigability has been taken under consideration by the San Antonio Court of Civil Appeals.

In 1976, a member of the staff of the Attorney General suggested that the Parks and Wildlife Department participate in the ongoing adjudication of the San Antonio River basin and the Medina Creek watershed in order to seek a guaranteed minimum flow for fish and wildlife. His memorandum offered an analysis of the Department's participation based on a State reserved right or public trust theory:

Two sorts of water rights are currently recognized in Texas--riparian rights and appropriative rights. The riparian right is based upon common law and is automatically accorded to the owner of land abutting on a river. It is a right of use; there is no actual ownership of the water involved. Riparian rights attach to the

"normal flow" of the river, i.e., that flow which normally exists uninfluenced by recent or heavy rainfall. Appropriative rights are based upon state statutes authorizing persons to make application to the state for the use of water. Such a right is gained by issuance of a permit from the Water Rights Commission. This right attaches primarily to the storm and flood flow of the river, as well as the unappropriated portion of the normal flow remaining after satisfaction of riparian rights. A statutorily established priority list for uses of water exists to guide the Water Rights Commission in recognition of appropriative rights. Recreation and fisheries rank at the very bottom of the list.

The right proposed for Parks and Wildlife to guarantee minimum flow does not fit precisely within either of the two water rights systems. Nevertheless, we hope to advance it along the following lines: Both of the water rights discussed, above, are rights of use; actual ownership of the water remains with the state. This water is the property of the state, held in trust for the benefit of all of the citizens of the state. Similarly, the state owns the fish and wildlife and they are held in trust for the benefit of all of the citizens of the state. Our argument would be, essentially, that the state has retained a portion of the water rights it holds in trust to satisfy the obligation imposed on it by its duty as trustee for the fish and wildlife. This retained right would come out of the riparian portion of the flow, i.e., the normal flow.

Water rights are administered on a priority basis--when water becomes scarce the newest water rights are shut off to satisfy the older water rights. A reserved right of the state in the riparian flow would, necessarily, date back to the state's original creation when it assumed ownership of the water. Thus, if such a right is recognized, it will be a very valuable right--not subject to denial in times of drought (Caroom and Newsom 1976).

The memo goes on to assert that entry of the court decree after an adjudication is final and bars later State rights being exercised. Under pure public trust doctrine, this conclusion may be erroneous; the appellate courts may well decide that a State may not forfeit its public trust duties and responsibilities through lack of participation in a water rights adjudication which is, after all, largely a method of settling disputes among private water rights owners. For the same reason, amounts granted in these adjudications may not be the full extent of flow protection under the public trust doctrine.

The Texas statutes define navigable stream as "a stream which retains an average width of 30 feet from the mouth up" (V.T.C.A. § 21.001 Natural

Resources Code). The definition holds whether the stream is actually navigable or not [Diversion Lake Club v. Heath, 126 Tex. 129, 86 S.W.2d 441 (1935)]. This definition applies even when water in an ordinary season flows over less than 30 feet of the width of that stream, and applies even if the stream during a drought ceases to flow and stands in holes [Heard v. Town of Refugio, 129 Tex. 349, 103 S.W.2d 728 (1973)]. Title to the channel and bed of these streams is retained by the State.

Lakes generally appear to be navigable in Texas when their use is for navigation by other than fishing and small pleasure boats, although a lake averaging four feet in depth, from which fish are taken, and which is capable of use for floating logs or shallow draft boats, may be navigable. The Diversion Lake Club and Heard cases are not entirely consistent.

In Texas, the public has an easement on navigable waters for transportation and other uses which may not be obstructed unreasonably by riparian owners. Statutory navigable streams are public; their waters are owned by the State in trust for the benefit of the people, and are subject to the use of the public for lawful purposes such as fishing to the same extent as are streams navigable in fact. Further exploration of the public trust navigation servitude doctrine in the State should be undertaken to determine whether, in a particular case, it would help preserve instream flows. Numerous cases discuss the doctrine.

An Attorney General's opinion states flatly:

In general the state is the owner in trust for the people of Texas of the water, bed, subsurface, minerals, and wild aquatic life in the rivers of Texas that are navigable by statute and also that are navigable in fact (Op. Atty. Gen. 1971, No. M953).

The public trust doctrine has also been used as an argument in a suit by the Attorney General of Texas to enjoin pollution of a stream [Goldsmith and Powell v. Texas, 159 S.W.2d 534 (Tex. Civ. App. - Dalls, 1942, writ ref'd.)].

The Texas courts generally follow the view that public trust lands cannot be bartered away by implication but must be expressly granted, but follow that in almost inconsistent patterns [Galveston v. Mann, 135 Tex. 319, 143 S.W.2d 1028 (1940)]. An important Texas case has developed public dedication theory. This is the unusual doctrine that trust property which has in the past been granted away to private owners can be reclaimed for the public if it has been long used by the public [Seaway Co. v. Attorney General, 375 S.W.2d 523 (Tex. Ct. of Civ. App. 1964)].

OKLAHOMA

Islands and accumulation of land formed in the beds of streams which are navigable, belong to the State, if there is no title or prescription to the contrary (60 Okla. Stat. Ann. § 337).

The Commissioners of the Oklahoma land office are authorized to lease for oil and gas purposes all lands between the mean high watermark and all streams or rivers of two chains or over; all such streams are the property of the State of Oklahoma (64 Okla. Stat. Ann. § 290). While this statute is not an overt declaration of navigability so as plainly to vest the State with ownership under the public trust doctrine, it is a declaration of ownership which might be proven to relate to navigability.

Oklahoma has declared a public easement on non-navigable streams in Curry v. Hill (460 P.2d 933, Okla. 969). This recognizes a public easement of navigation and recreation over non-navigable waters despite private ownership of the bed and extends public rights further without resorting to tests of navigability.

ARKANSAS

The statute giving the Arkansas Public Service Commission jurisdiction over crossings over navigable water contains a definition of navigable waters for the purposes of the Act (Ark. Stat. Ann. 73-2201). This is not necessarily the definition of navigable waters that may be finally determined appropriate for the use of the public trust doctrine in Arkansas, but is, at least, an indication of the intent of the legislature in defining navigable waters for public carriers. Navigable waterway is defined as "any navigable river, lake or other body of water used, or susceptible of being used in their natural condition as highways for commerce...." In addition, by Ark. Stat. Ann. 21-101, the General Assembly of Arkansas approved the declaration of the United States Congress that the Cache River is nonnavigable in 1917. The purpose of the congressional statement was to avoid the necessity of building draw bridges over the river. It has the effect, however, of helping define the public trust in that stream.

The Arkansas Waterways Commission is intended to promote the development of navigable streams for water transportation and to coordinate activities of port facilities, navigation areas, Federal agencies, State agencies, and others (Ark. Stat. Ann. 21-1701 - 1703). The duties of the Commission are largely study and coordination. Because the Commission impinges on so many State and Federal agencies, instream flow advocates should provide the Commission with information and data on instream flow needs and values for both navigable streams under the Commission's jurisdiction and nonnavigable streams which impinge upon and affect the flow in navigable streams.

Before the McIlroy case, use of the public trust doctrine by Arkansas to protect navigable streams within the State seemed limited by a restricted definition of "navigability". The McIlroy case shows that the public trust doctrine is vigorous in Arkansas, and may help protect Arkansas streams.

In defining navigability of streams, Arkansas had repudiated the "saw log float" and small craft tests and appeared to have embraced the criterion of actual commerce, a term which is continually being broadened in other States.

The Arkansas cases were not entirely clear [Commissioner of Revenues v. Moore, 222 Ark. 811, 262 S.W.2d 891 (1953)]. In addition, Arkansas courts seem to have adopted the rule that a waterway may lose its status of navigability [Five Lakes Outting Club, Inc. v. Horseshoe Lake Protective Ass'n, 226 Ark. 136, 288 S.W.2d 942 (1956) (dictum)]. If a river was navigable prior to construction of dam, however, it continues to be considered a navigable stream.

SOURCES

Statutes and cases summarized in the text are not listed here.

Althaus, H. S. 1978. Public Trust Rights. Prepared for Regional Solicitor, Portland Region, U.S. Department of the Interior (for internal use as a work of general reference). November

Caroom, D. C., and S. Newsom. 1976. Memorandum to P. Johnson, Chairman, Parks and Wildlife Commission, re: Guaranteed Minimum Flow for Fish and Wildlife. 1 December.

Claim of the Texas Parks and Wildlife Department for water rights filed in:
In Re: The Adjudication of Water Rights in the Medina River Watershed of the San Antonio River Basin before the Texas Water Rights Commission, Austin, Texas.

Grimes, J. S. 1963. Lex Aquae Arkansas. 27 Ark. Law Review 429.

Mack, L. 1963. Water Law in Arkansas. October.

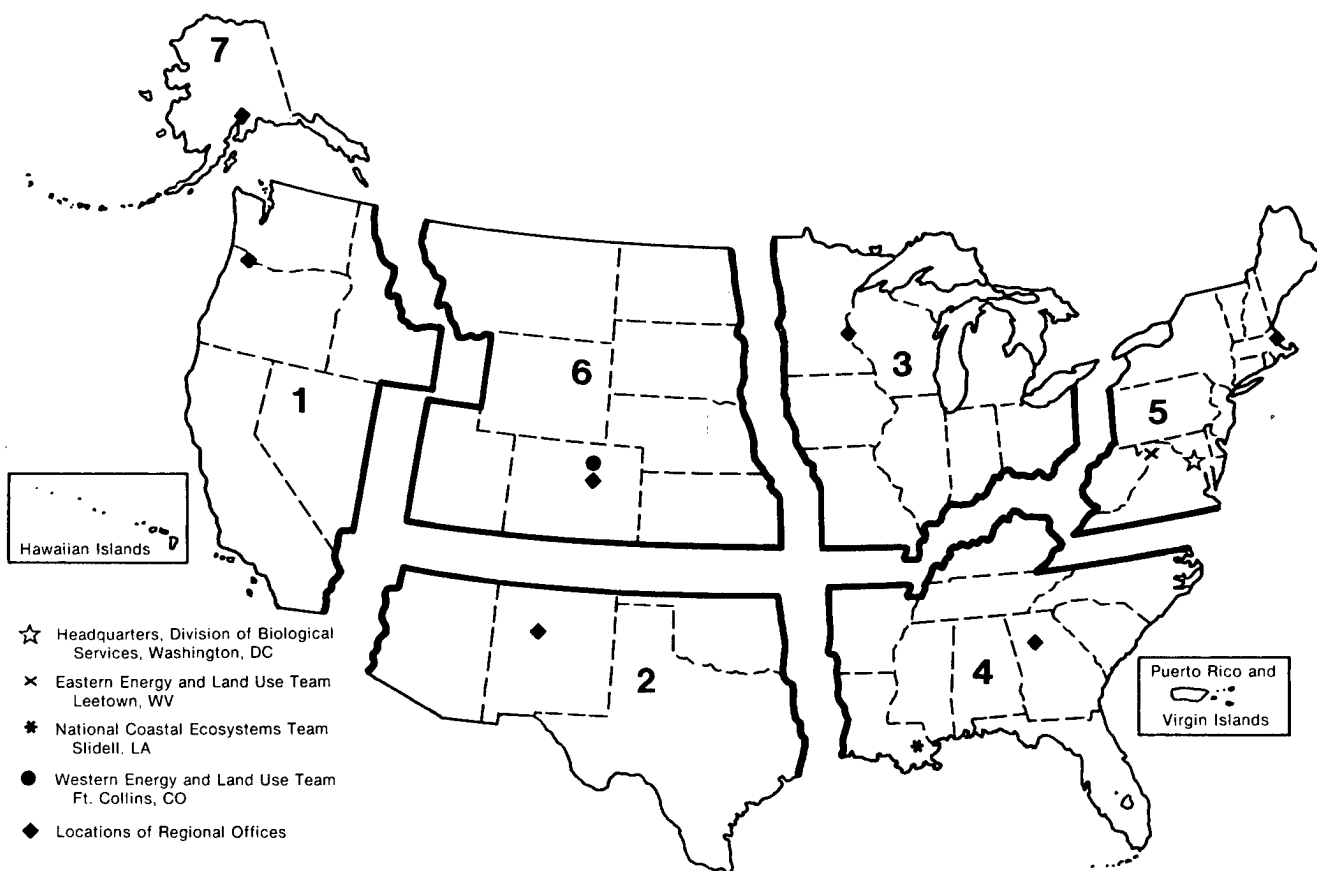
Mays, P. D. 1980. Draft Update to Arkansas Water Law. Unpublished.

_____. 1980. Counsel to the Arkansas Soil and Water Conservation Commission. Personal communication.

Sax, J. L. 1970. The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention. 68 Michigan Law Review 473.

Smith, F. E. 1980. The Public Trust Doctrine, Instream Flows and Resources: A Discussion Paper. Prepared by the California Water Policy Center; U.S. Fish and Wildlife Service, California-Nevada Area Office. March.

REPORT DOCUMENTATION PAGE		1. REPORT NO. FWS/OBS-83/22	2.	3. Recipient's Accession No.
4. Title and Subtitle Opportunities to protect instream flows in Texas, Oklahoma and Arkansas		5. Report Date September 1983		
7. Author(s) Mary Ray White		6.		
9. Performing Organization Name and Address Mary Ray White 303 First of Bear Valley Building 5353 West Dartmouth Avenue Denver, CO 80227		8. Performing Organization Rept. No.		
		10. Project/Task/Work Unit No.		
		11. Contract(C) or Grant(G) No. (C) 14-16-0009-79-100 (G)		
12. Sponsoring Organization Name and Address Western Energy and Land Use Team Division of Biological Services Research and Development Fish and Wildlife Service U.S. Department of the Interior Washington, DC 20240		13. Type of Report & Period Covered		
15. Supplementary Notes		14.		
16. Abstract (Limit: 200 words) This publication is one of a series of similar documents for western and midwestern States that provides a basis survey of State prerogatives and programs that may be used to protect the instream uses of water. Most of the opportunities for protecting instream flows are related to fish and wildlife habitat, although many other instream uses are considered, including hydroelectric power production, recreation, navigation, downstream delivery, and waste load assimilation. These documents illustrate methods to protect instream uses within the context of existing rules and regulations.				
17. Document Analysis a. Descriptors Water conservation, water flow, water law, water resources, water rights, watersheds, water supply, habitability, hydroelectric power generation. b. Identifiers/Open-Ended Terms Texas Oklahoma Arkansas Instream flows c. COSATI Field/Group				
18. Availability Statement Unlimited		19. Security Class (This Report) Unclassified		21. No. of Pages xxv +94pp
		20. Security Class (This Page) Unclassified		22. Price



REGION 1

Regional Director
U.S. Fish and Wildlife Service
Lloyd Five Hundred Building, Suite 1692
500 N.E. Multnomah Street
Portland, Oregon 97232

REGION 2

Regional Director
U.S. Fish and Wildlife Service
P.O. Box 1306
Albuquerque, New Mexico 87103

REGION 3

Regional Director
U.S. Fish and Wildlife Service
Federal Building, Fort Snelling
Twin Cities, Minnesota 55111

REGION 4

Regional Director
U.S. Fish and Wildlife Service
Richard B. Russell Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

REGION 5

Regional Director
U.S. Fish and Wildlife Service
One Gateway Center
Newton Corner, Massachusetts 02158

REGION 6

Regional Director
U.S. Fish and Wildlife Service
P.O. Box 25486
Denver Federal Center
Denver, Colorado 80225

REGION 7

Regional Director
U.S. Fish and Wildlife Service
1011 E. Tudor Road
Anchorage, Alaska 99503



DEPARTMENT OF THE INTERIOR

U.S. FISH AND WILDLIFE SERVICE



As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.